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THE STATE OF PENNSYLVANIA
*vs.*
THE WHEELING AND BELMONT BRIDGE COMPANY.

*Supreme Court of the UNITED STATES,*
*In Chancery,*
*No. 2, Dec. Term, 1849.*

## MR. STANTON'S ARGUMENT.

*May it please the Court:*—It is my design o present briefly as I can, the grounds on which the State of Pennsylvania prosecutes his suit and claims relief of this Court.—That purpose will be served by the discussion of a single proposition which will embrace all the points made, viz:

*That the Ohio river is a highway of commerce leading to and from the ports of Pennsylvania, regulated by Congress, unlawfully obstructed by the Wheeling Bridge, to the injury of the State of Pennsylvania; and therefore that the Bridge ought to be abated by decree of this Court at her suit.*

The first branch of this proposition, that e Ohio River is a highway of commerce, will ot be disputed; for it is a geographical and atistical fact recognized by every department of the government of which this court ould take judicial notice; and by their answer the defendants admit that this highway navigated in steamboats by citizens of the ate of Pennsylvania and connects with her rts. The boundary of six States, its wars draining a large territory of four other ates, flowing in a southwest direction from e Allegheny mountains to the Mississippi, esenting to the navigator a broad and pla- l stream one thousand miles in length, more e from dangers and obstructions than any ner navigable river in the world—it is apparent that the regulation of this river would im the earnest attention of statesmen. Accordingly we find that when the possession of s river and the territory through which it wed had been secured by independence and ace with Great Britain, the sagacious states- n of that day speedily turned their attention to the regulation of the western rivers, d the commerce they foresaw must soon w along their course.

On the 12th day of May, 1786, on the mo- n of Mr. Grayson of Virginia, the following resolution was adopted:

esolved, That the navigable waters leading into the ssissippi and St Lawrence and the carrying places between the same be and they are hereby declared to be common highways, and be forever free as well to the inhabitants of said territory as to the citizens of the United States and those of any other States that may be admitted into the confederation without any tax. impost, or duty therefor.—[Journal of Congress, 1786. 637.

Soon after this, all questions as to the title of the territory northwest of the Ohio being secured by compromise and cession of the claims of the several States, an ordinance for its regulation was adopted by Congress.—This was the ordinance of 13th July, 1787, since become so famous in connection with another question. The 4th article, last clause, of this ordinance, contains a regulation in the same words as the resolution of Mr. Grayson. A similar condition has been imposed on the admission into the Union of every State bordering upon these waters. It is denied by the defendants, that Virginia assented to this provision of the ordinance.—But this can make no difference, for it is nevertheless a regulation of commerce by Congress, as has been decided by this Court, (3. *How*, 229,) and at all events it overthrows the authority claimed by these defendants under the legislation of Ohio.

In 1789, Virginia being in possession of a large territory northeast of the Ohio, now constituting the State of Kentucky, desired to have it admitted into the Union as a separate and independent State. For this purpose her General Assembly, on the 18th December, 1789, passed an act providing for its erection as an independent State upon certain terms and conditions, among which were the following:

"That the use and navigation of the river Ohio, so far as the Territory of the proposed State, or the Territory that shall remain within the limits of this Commonwealth lies thereon, shall be free and common to the citizens of the United States."—*Virginia Rev Code*, 1819, *page* 59.

To this act the assent of Congress was given, (1. *U. S. stat. at large*, 64,) and it became a compact between Virginia and the other States of the Union. Freedom being thus established by Congress and the concurrent action of Virginia, as the regulation of the river channel, its commerce was still fur-

ther regulated by the act of Congress of 1807, attaching the Ohio river to the collection district of Mississippi, and appointing surveyors for the ports of Pittsburgh, Marietta, Cincinnati and Louisville.—[1. *U. S. stat.* 464.

The growing commerce of this region in 1824, received further attention from the General Government, by a large appropriation to improve the navigation of the Ohio river, and from that period until now, annual appriations have been made to improve its navigation and *remove obstructions.* This commerce being carried on by steamboats, the regulation of these vessels, in 1838, received the attention of Congress. The act of 7th of July, 1838, provided specially for their license and enrollment, for the appointment of an inspector of their boilers, engine and machinery, prescribing the duties of the officers and enforcing severe penalties, in case of injury to persons or property.—4. *U. S. stat.* 304.

Thus it appears that the constitutional power of Congress to regulate commerce on the Ohio river, belonging exclusively to that branch of the general government, has been fully exercised upon every subject susceptible of regulation. This power has been exerted upon the channel, and whatever passes through it—upon the stream and upon its bed, upon the vessel, its navigator, and whatever it transports,upon its engine, machinery, cargo, passengers, officers and crew. Nay, that it has extended to the very subject now under consideration, and that Congress by express and repeated action has prohibited the erection of a Bridge at Wheeling, I shall proceed now to show.

In 1836 petitions to Congress, praying for the construction of a Bridge at Wheeling, were laid before that body. They were backed by resolutions of the State of Ohio instructing her Senators and requesting her Representatives to use their exertions to obtain that object. Accompanying them were statements and representations of similiar import to the grounds now urged in favor of the Wheeling Bridge. The importance of such structure as a link connecting the disjointed fragments of the Cumberland Road—the great advantages to commerce and to the general government in the time of war, of such facility for crossing the Ohio river—the obstructions of ice and drift-wood and the evils of the ferry—the inconvenience of delay in transporting the mails—all these were held up in bold relief, and represented in glowing and exaggerated colors. With the petitions were presented various communications from Mr. Ellet, the Engineer, by whom this bridge has been erected, urging the necessity and practicability of the undertaking, and presenting plans for its accomplishment. A favorable report was procured from the Committee on Roads and Canals, which undertook to answer the objection urged against bridging the Ohio. From this Report it appears that the main, and indeed, the only important objection was that now insisted on by the State of Pennsylvania; the obstruction which such an erection would be likely to occasion to steamboats. In answer to this objection it was insisted then, as now, that high chimneys were unnecessary, and that the few boats likely to be obstructed might with proper machinery accommodate themselves to the exigency, and that their convenience should yield to the public benefits of a bridge. But Congress thought otherwise, and the plan was rejected.—*House Reports, 24 Cong., No. 132, 1st sess.*

At the next session of the same Congress the subject was again brought forward; the same plan proposed; the same views presented, same arguments urged.

The project was again opposed in Congress on the ground of its injury to navigation, and, as is evident from the Committee's report was on that ground alone defeated.—*House Reps. 2d session 24th Cong.* 672.

Still insisting upon a bridge at Wheeling, the 25th Congress had the subject presented in a report of the Committee on Roads and Canals, on the 27th of June, 1838. In the meantime an exploration and survey had been made under the direction of the War department, by Messrs. Sanders and Dutton, two skillful and distinguished engineers in the Government service. They presented a plan for a suspension bridge across the Ohio river having for its basis a strict regard to the right of navigation and providing that no obstruction should be offered to the passage of the highest steamboat chimneys on the highest floods. Their plan proposed a space of 500 feet in width, and the height of the highest chimney then known and in order to provide for any change, or improvement in steamboats, the floor of the bridge was to be *moveable*, so as to allow the passage of boats. Report of Messrs. *Sanders and Dutton*, House Documents, 25th Congress, June, 1838, No. 993. The cost was estimated at $400,000. A plan, by Mr. Ellet was also submitted for a bridge, the same elevation, 700 feet in width. But the same objections being urged, were found to be insuperable, and the plan was rejected.

It is further to be remarked, that among the documents of this session was a surrender by the city of Wheeling, of its streets for the purposes of a bridge, and by Zane, of any portion of the island for purposes of embankment. And yet an excuse now given, for not erecting the bridge higher, is the alleged damage to the streets, and the amount Zane would charge for embankment on the island, which is set down at the moderate estimate of $20,000. These rights were then free.

granted for the bridge, and it was not, until a later day, that the cheap expedient was resorted to, of saving private property by the encroachment of public rights on a navigable river.

In December, 1843, another series of Resolutions were procured from the Ohio Legislature, and armed therewith those interested in making Wheeling the head of navigation again appeared before Congress.—But Pennsylvania had become awakened to her interests, and the danger becoming imminent, she instructed her Senators and Representatives to oppose the erection of the proposed bridge across the Ohio. Her resolutions pointed to the specific objections now urged—the obstruction to the free use of the Ohio river—the injury to commerce, trade and manufactures—building of ships, war steamers and other vessels, by placing a barrier in the passage to the Gulf—the interfering with steamboats in high water trading with the Western and Southern States, and claimed the use of the Ohio river as a great thoroughfare. They were in these words:

*Whereas*, Application has been made to Congress of the United States for an appropriation to aid in the erection of a bridge across the Ohio river at Wheeling, Virginia, the construction of which might materially obstruct the free use and navigation of said river above that point, and injuriously affect the commerce of the city of Pittsburgh and all that district of Pennsylvania lying west of the Allegheny mountains, by arresting the building of war steamers and other vessels of the great western manufacturing and commercial emporium of this State, by placing a barrier to their passage to the Gulf of Mexico, besides seriously interfering with the free navigation of the Ohio river by steamboats and other vessels engaged in the trade of the Western and Southern States during high stages of water. Therefore

*Resolved* by the Senate and House of Representatives of the Commonwealth of Pennsylvania, in general assembly met, That our Senators in Congress are hereby instructed, and our Representatives requested, to vote against any appropriation by the national legislature to the object above stated, and *oppose* every proposition for the erection of a bridge at Wheeling or at any other point on the Ohio river, or any project that would result in increasing the obstacles already existing to the free navigation and use of that great thoroughfare of this Commonwealth.

*Resolved*, That the Governor be requested to transmit a copy of the foregoing preamble and resolution to each member of the Pennsylvania delegation in Congress.

JAMES ROSS SNOWDEN,
*Speaker of the House of Representatives.*
WILLIAM BIGLER,
*Speaker of the Senate.*

Approved 26th January, 1844.

DAVID R. PORTER.

These Resolutions were immediately laid before Congress, and referred in the house to the Committee on Roads and Canals, on which was Mr. Steenrod, a member from Wheeling.—*House Doc.*, 28 *Cong.*, *No.* 79. Here, then, the question was brought before Congress in the most solemn and imposing form. Two sovereign States appeared at the bar of Congress, one urging and the other opposing the bridge.

At this crisis a Bill had already been reported by that Committee making an appropriation for a bridge at Wheeling, and containing this clause, "that the bridge shall be so constructed as to admit at *all* times, without obstruction or delay, of the safe and easy passage of steamboats of the *largest* dimensions."

On the twenty-ninth day of January Mr. Steenrod presented a report not contesting the rights of Pennsylvania, nor the injury she must suffer from an obstruction at Wheeling, but claiming that a bridge *could* be erected across the Ohio at Wheeling, without obstructing the use and navigation of the river according to the provisions of the bill. With this report was submitted, a plan by Mr. Ellet for such a bridge, stating that he had since the date of his former plan examined the localities and "would recommend a radical change of plan for the Wheeling Bridge, *and leave the river entirely unobstructed.*—*House Rep.* 28 *Cong. No.* 79.

It appears, moreover, that the plan proposed was in some respects similar to that afterwards adopted and executed by the same engineer. It was a single span across the river, at an elevation of 90 feet above low water. But it was not then disclosed that such elevation was to be only for one hundred feet in width—that the channel was to be cut across by an inclined plane so as to obstruct a public navigable river. The specific objection was then urged as now, that 90 feet above low water would not admit the passage of steamboats with tall chimnies. It was then answered as it is now—that such height was unnecessary—that few boats only used such chimnies—that they ought to be provided with hinges and machinery for lowering—that detention would be only for a short space—that the river was often impassable by reason of ice—that the mails were delayed, and in short, every possible argument that has been or can be presented in favor of this bridge was, in a report by the member from that district, pressed upon Congress. It was all to no purpose. The rights of Pennsylvania and her interests of navigation were deemed paramount, and the constitutional obligation to preserve the Ohio river as a free and common highway was held to be inviolable.

Now the regulation of commerce consists as much in negative as positive action.—*Mr. Justice M'Lean, Passenger cases*, 7 *Howard* 399.

Supposing, therefore, the Ohio river to be exclusively within the territory of Virginia, on both banks and from its head to its mouth, and that she might authorize bridges over it, yet that power is subordinate to the constitutional authority of Congress over commerce. And if Congress in the exercise of its power has manifested a negative policy hostile to bridges over the Ohio, any conflicting exercise of State authority would be void. And yet in their answer, this hostile policy of Congress is the confessed motive for procuring their charter from the State of Virginia. Nay more, its purpose is admitted to be that which

the power granted to Congress by the 3d clause 8th article of the constitution was especially intended to prevent, the acquisition by States, for their citizens, of commercial advantages by separate legislation.

"The addition of territory and of settlement on the Pacific ocean, and the increasing population and commerce of that coast, has recently given new importance to the subject; *the change in federal policy and legislation as to bridges* and other works of internal improvement has made it incumbent upon the States *by separate legislation*, to consult and promote their own and the general welfare and prosperity."—*Original answer, page* 24.

The defendant's allusion to the Pacific settlements and commerce is of deep significance, and indicates the result to be expected if States may thwart and override the Constitutional provision, and by separate legislation consult their own and the general welfare. It has been well remarked that in such event the Constitution would be a rope of sand.

It is manifest, therefore, that the only Constitutional power that could in any event authorise this bridge had been invoked, and that by its negative action, potentially as by express enactment, this structure was prohibited.

Commerce on the Ohio being thus regulated by Congress, and that regulation including all the subjects of navigation its vehicle, and those engaged in its management, it follows that any act or erection, in any way affecting the subjects thus regulated, whether by individuals or State Governments, is unlawful. In the great case of *Gibbons vs. Ogden*, (9 Wheaton, 1) this Court decided that the power to regulate commerce included navigation, and when exercised by that body, any conflicting State regulation, no matter for what purpose or extent adopted, was void. In the subsequent case of *Wilson vs. The Blackbird Creek Marsh Company*, (2 Peters, 245) it was held that *any* exercise of this power by Congress excluded and controlled all State action.

Subsequent cases have illustrated these principles, applying them to all action, direct or indirect, of individuals or States interfering with Congressional regulations of foreign and domestic commerce. In the passenger cases, *Norris vs. Boston, and Smith vs. Turner*, (*Pam. Rep. page* 85) Chief Justice Taney remarks: "It has always been admitted in the discussions upon this clause of the constitution, (art. 8, sec. 3,) that the power to regulate commerce, includes *navigation* and *ships* and crews, because they are the ordinary means of commercial intercourse." In the same cases, Mr. Justice Daniel observes: "The power to regulate commerce, includes the *regulation of the vessel*, as well as the cargo, *and the manner of using the vessel* in that commerce." Ib. p. 131.

In these cases the following propositions were among others maintained:

"That the power to regulate commerce, foreign and between the States, was vested exclusively in Congress."—*Mr. Justice McLean*, 7 *Howard*, 400.

"That the power in Congress to regulate commerce with foreign nations, and among the several States, includes navigation upon the high seas, and in the bays, harbors, lakes and navigable waters within the United States; and any law by a State, *in any way affecting the right of navigation*, or subjecting the exercise of the right to a condition, is contrary to the aforesaid grant."—*Mr. Justice Wayne, Ib.* 414.

"That Congress has regulated commerce, and intercourse with foreign nations, and between the several States, by *willing that it shall be free*, and it is therefore, not left to the direction of each State in the Union, either to refuse a *right of passage* to persons or property through her territory, or to exact a duty for permission to exercise it."—*Mr. Justice Catron and Mr. Justice Grier, Ib.* 464.

The principle of these decisions has been illustrated and enforced by a long series of cases cited in the brief, and to which it is sufficient for me to refer. (See cases cited in brief.) Hence it follows that the bridge erected by the defendants over the channel of the Ohio river, if it obstructs, interferes with, or in anywise regulates navigation, is an unlawful obstruction, no matter by what charter or State enactments it may be authorised or sanctioned. I proceed to demonstrate that it does obstruct navigation, and conflicts with every regulation prescribed by Congress for that river.

At Wheeling, the channel between Zane's Island and the main Virginia shore is one thousand and ten feet wide.

Through this strait, fifty millions in value of property, and over three hundred thousand passengers are accustomed to pass safely and without impediment, in steamboats, to and from Pittsburg. Through it, the rice, cotton, and sugar of the Southern States, the bacon, flour, tobacco, and various products of the Western States, the furs, peltries, minerals and products of the North western region, are transported to an Eastern market; and by the same channel, foreign and domestic merchandize and manufactures find their way to their millions of consumers in that vast region. Baffled in the project of diverting this commerce from Pittsburg, by making Wheeling the head of navigation, under the sanction of Congress, resort was had to State authority, where Pennsylvania had no voice and where her remonstrance could not be heard.

On the 19th of March, 1847, a charter for the erection of a wire suspension bridge was obtained from the General Assembly of Virginia, under color of which, but in violation of the most important of its express provisions, the defendants proceeded to erect their bridge in the manner represented in the diagram now exhibited to the Court. [See diagram.

An inspection of that diagram exhibits the fact that the only material variation between the bridge erected, and that proposed to be

rejected by Congress in 1844, consists in a particular, whereby nine hundred feet of the river channel is wholly cut off for purposes of navigation. When the engineer, by whom this structure was erected, proposed to throw a single span across the channel 90 feet above low water, no one could have imagined that elevation applied to only 100 feet in width of the water's surface, and that by an inclined plane stretching across the channel the residue was to be cut off. And yet such is this erection. The highest point in the bridge above low water level is 92 feet 1½ inches: from that point it deflects four feet in every hundred, being at the western abutment only sixty-two feet above that level. Taking the highest point as a centre, the highest space, 100 feet wide, it is at its extremities only 90 feet above water.

This elevation, moreover, is above the *low* water level of the Ohio, viz: 18 inches in the channel. But this level exists for a short season only of the year, the height of water varying 45 feet between the extremes of high and low water mark. The tables in the record exhibit the height of water at Wheeling each day for the period of the last ten years. From them we gather—

1st. That the usual spring and fall floods, in March and December, attain the height of thirty-eight feet.

2d. That floods, ranging from twenty to thirty-eight feet, have occurred in the months of January, February, March, April, May, June, July, November and December, nine several months in the year.

3d. That the duration of these floods varies from two to ten days. (See table record 295.)

Regard to these facts has always been deemed of vital importance in the consideration of bridging navigable waters. Thus the wire suspension bridge over the Menai Straits, swings clear one hundred feet above *high* water; the Tweed bridge is the same elevation; the Freyburg bridge spans the channel at an elevation of one hundred and twenty-seven feet above high water, (*Sandler's Report*;) and on a late occasion of erecting a railway bridge over the Menai straits, the Lords of Admiralty required the structure to be 100 feet above high water, the whole width (2800 feet) of the channel, (*Quarterly Review, Oct.* 1849.) Stern adherence to this requisition led to the most brilliant achievement of science since the days of Sir Isaac Newton. While the Conway tubular bridge will stand as a monument of genius, overcoming natural obstacles to accommodate navigation, the Wheeling bridge hangs an obstruction to navigation, copied by its engineer from the miserable expedient of a South American Indian, its original inventor.

With utter disregard to the principles of science and the exigencies of commerce, *low* water level is taken as the basis of elevation for the Wheeling bridge, and upon usual floods, only a space one hundred feet in width by fifty in heighth is allowed for the passage of vessels ascending and descending the Ohio river—through that space the commerce of the most navigable river in the world is compelled to stoop and dodge in high floods.

The extent of departure from the principles of art—the engagements of the parties and the obligations of law, will be seen in the following considerations:

1st. It is an ordinary wire suspension bridge, which over a channel like the Ohio, is condemned by one of the most distinguished engineers of this country, whose opinion, from his official employment as superintendant of the improvements of navigation on the Western waters, is entitled to great weight.

"I have no hesitation in giving the opinion that ordinary wire suspension bridges are not well adapted to the bridging of the Ohio; and in view of the excessive ranges, from extreme low to extreme high water, ranging as they do, from thirty-five to sixty-five feet at different points, I am persuaded that none but truss frame bridges with suitable draws at one or both extremities, or at suitable intermediate points, are properly adapted to bridging the Ohio. Hence, I am decidedly of the opinion that wire suspension bridges are neither expedient nor applicable in bridging the Ohio, or any other of the main navigable rivers of the west, liable as they all are to excessive changes in the elevation of their surfaces and the depth of their floods."—*Col Long's deposition ps.*139 '40.

2d. *It is an inclined plane* thrown across a swift stream of ever-varying surface, the current setting west towards the lowest point of the bridge, rocks fringing the highest point on the east, with nothing to mark the depth below, or the space above the surface, no two points at the same level, and nothing to guide the navigator in the perils that thus beset him. This inclined plane is placed so low as on spring floods to leave a clear headway of only fifty feet by one hundred in a natural channel one thousand and ten feet wide, over the whole of which vessels have hitherto been accustomed at all hours, in all weather, to pass safely, but where now the obscurity of fog and darkness, the force of the current, or accident in the complicated machinery of a steamboat, expose it to shipwreck.

3d. It not only forbids all advance or improvement in the size and dimensions of vessels, but forces them back ten years, making the dimensions of the Louisville bridge and the condition imposed by the falls of the Ohio, the standard of steamboat architecture and navigation.

That in these respects, also, such a bridge is against all example and rule, I shall now proceed to show, by the highest authority in the science of engineering.

"Among the considerations that should be held up to view, in throwing bridges across the Ohio, it may be stated that the bridge shall offer no serious obstruction to the navigation of the river, by steamboats or other craft, according to *existing peculiarities of such boats* or craft, and to sound considerations of *probable improvement in the size*

and character of such boats and craft."—*Col J J Abert, Chief of Top. Bureau. Record, page* 124.

"In selecting a plan for a bridge over the East branch (of the Ohio at Wheeling,) full regard must be had to the interests of the navigation of the Ohio, *which require* that the bridge should offer *no obstruction* to the passage of steamboat or other craft which *run* or may *hereafter* navigate that river."—*Report on Wheeling Bridge to the War Dept, by Lieuts. Sanders and Dutton, House Rep.* 25 *Con.* 1 *Sess. No.* 903.

"The bridge shall be so constructed as to admit *at all times without obstruction* or delay of the safe and easy passage of steamboats of *the largest dimensions*"—[*Bill making an appropriation for a Bridge at Wheeling; reported by the Com. on Roads and Canals. House Rep.* 28 *Cong.* 1*st Sess. No.* 79.

Telford's Wire Suspension Bridge over the Menai Straits leaves a clear level water way *five hundred feet wide.* The Freyburg bridge leaves a clear water way eight hundred feet wide.—[*Ellet's Letter, House Rep.* 24 *Cong., No.* 672.

The English Lords of Admiralty required the Conway bridge to give *a clear water way* one hundred feet above high water over *the whole width of the channel* 2800 feet.—*Oct. Quarterly Review*, 1849., 218. In his first plan for a bridge at Wheeling submitted to Congress, Mr. Ellet proposed a clear water way 700 *feet wide.—House Rep.* 24 *Cong., No.* 672. In his last plan he proposed a clear water way over the whole width of the channel and *leave the river entirely unobstructed.—Ellet's Letter, Dec.* 29, 1843. *House Rep.* 28 *Cong.* 1*st Sess., No.* 79.

Influenced, doubtless, by these rules and examples, the Virginia Legislature provided in the Charter of this Bridge—

"If the said bridge mentioned in the eighth section of this act, shall be so erected as to obstruct the navigation of the Ohio river in the usual manner of such steamboats, and other crafts, as are now commonly accustomed to navigate the same *when the river shall be as high as the highest floods heretofore known*, then unless upon such obstruction being found to exist, such obstruction shall be immediately removed or remedied. the said last mentioned bridge may be treated as a public nuisance and abated accordingly."

When this charter was accepted the defendants and their engineer thereby admitted the propriety of its requisitions, and engaged to comply with them. It was a part of their contract, with which they were bound to comply.—*Agar vs. Regent's Canal. Coop.* 77. *Blakemore vs. Glamorganshire Canal*, 1 *Myl. & K.* 164. In total disregard of all this, the defendants have erected their bridge on the novel plan of their engineer—undertaking to divide inconveniences with commerce on a public river, imposing expense, danger and delay, razeeing its vessels and averaging its floods.

"It is fair to make a division of these inconveniences, and I would therefore provide for a passage of fifty feet, and a flood of thirty-five, and if occasion should require it, *allow* one or two of these boats to lie by for a few hours"—[*Ellet's Letter. House Reports*, 28 *Cong., No.* 79, *Page* 4.

Vessels navigating the Ohio are propelled by the agency of wind or steam, and with the dimensions of the bridge or channel thus ascertained, it remains only to examine the result upon these vessels.

At a single glance it is apparent that ships and sea going vessels, requiring, as they do, over 12 feet draught and 90 feet above the water, are wholly excluded from navigating the Ohio above Wheeling. By the evidence, it is shown, that from the Port of Pittsburg, ships have been cleared for foreign ports, laden with domestic products. Revenue and War vessels have been constructed there for the general government, and a large and prosperous business in ship building and naval architecture is springing up. The Bridge at Wheeling necessarily involves the total destruction of this business and the exclusion of such vessels and their commerce from the ports of Pennsylvania. Upon steam vessels the exclusion operates with but little less injury.

The diagrams now exhibited to the Court, represent the figure and dimensions of the Ohio steam vessels. Two classes are spoken of. The first being large and swift packets plying between Pittsburg and Cincinnati. The second class comprising transient vessels and those which, in the course of their business, pass through the Louisville canal.

The first class average in length two hundred and thirty feet; they are over fifty feet wide; their pilot house stands forty-eight feet above the surface of the water, and they require for free passage upwards of seventy feet space. It is apparent, then, that to the passage of these vessels the Bridge offers a total obstruction whenever the water exceeds twenty feet in height. And this, it has already been shown, is liable to occur in nine several months of the year, and continue from two to ten days at a time. Four times since this Court commenced its session they have been obstructed. The second class of boats are one hundred and eighty feet in length, forty-nine feet wide, with pilot house forty-seven feet above the water, and chimnies over 60 feet high.

Upon the spring and fall floods, ranging from thirty to thirty-eight feet, the passage of these boats will also be prevented. It is said this class are provided with machinery for lowering a portion of their chimnies. And so they are; but the proof exhibits that this machinery has been resorted to as an expedient in order to avoid the obstruction of the Ohio falls, by passing through the canal at Louisville. And it is insisted by these defendants that all boats passing to and from Pittsburg, shall be subject to the same condition; imposing upon navigation between Wheeling and Pittsburg the disadvantages of a great natural obstacle like the falls at Louisville.

Different opinions have been expressed by witnesses on the subject of lowering chim-

nies. A few observations in connection with the draughts now before the Court, will here be made.

Two plans of lowering are described. By the first, a few joints of chimney at the top, turning on a hinge, are lowered sufficiently to pass through the Louisville Bridge. But this mode is confined, as evidently it must be, to cases where a short piece of small diameter and light weight is to be lowered. Yet, even in these cases it is spoken of as being a troublesome, expensive and dangerous duty. Hinges have broken and chimnies fallen and crushed the decks; officers and men on the deck are exposed to danger at night in windy and stormy weather. The packet chimnies, weighing from 2500 to 3000 pounds, and five feet in diameter, require a different management. For lowering these, the only mode suggested is by the use of hinges at the hurricane deck. Let us consider, then, the condition of one of these packets in effecting its passage on high water.

Through the Louisville canal, boats pass slowly with steam and fire down, with no opposing currents and no skill required to direct their course. The whole force, skill and attention of officers and crew may there be devoted to lowering the chimnies. But boats descend the Ohio river at the rate of from 15 to 20 miles per hour, and upon a current running between Zane's Island and the Virginia shore at the rate of five to eight miles an hour, which shortly above the Bridge, sets strongly out from the main shore to the island, thus inclining boats to the lower part of the bridge. (See depositions of Duval and others.)

The boats, moreover, usually arrive at the bridge in the night season. When, therefore, their chimnies are to be lowered, supposing it even possible by mechanical contrivances and skill, the task is to be accomplished under the most formidable dangers. Upon a slippery deck, over boilers of steam and a fiery furnace, contending with wind and current, the boat must be guided through a narrow space of 100 feet in width, while large chimneys, three tons in weight, are to be lowered to the deck. It is plain, that any accident under these circumstances involves hazard and destruction to life and property, exposing officers, passengers and crew to disaster and death in the most appalling form. Numerous instances of casualties are spoken of by the witnesses that have happened on the small boats passing bridges on the Monongahela and in the Louisville canal. What, then, is to be apprehended at the Wheeling Bridge on the Ohio river, if the packets are to be subjected to such condition? Upon the evidence in this case, there is no room to doubt the consequences that must ensue.

With these general observations, I proceed to examine the evidence in detail. In the original answer it is admitted that there are boats that cannot pass the bridge. The first supplemental answer admits that there are six boats, the owners of which refuse to re-model their chimnies, so as to enable them, in case of a freshet, to pass under the bridge. (*Record page* 44. In their memorial of January 1st, 1849, "calling upon the legislature of the State to amend their charter, as to sanction by law the height fixed by the board of managers," it is admitted that on a *rise of thirty feet*, a few of the larger class of boats "will be compelled" to lower their chimnies. (*Record page* 56. On a rise of *twenty-five feet*, still fewer boats *will be compelled to do so.* On a flood of twenty feet, from five to six boats "will be required to lower their chimnies."—*Record page* 57.

It is also confessed that the requisition imposes "little trouble" and a "small additional expense." *Record page* 57.

The *fact* being thus confessed by the defendants, that the bridge will arrest the passage of boats—impose the condition of "remodelling their chimnies," exact the duty of lowering them in order to pass, and incur by this requisition trouble and expense, the *right* comes in question.

That no State could grant authority so to interfere with vessels, regulated and licensed, pursuant to the acts of Congress, and navigating a river, over which Congress had extended its protection as to boats, commerce and bridges, has already been shown. That Virginia neither assumed nor delegated such authority by their charter, appears from its terms. That the defendants knew they had no lawful authority, is proved by their calling on the legislature to *amend* their charter and *sanction* by law the height of their bridge.

But several grounds of justification or rather excuse are urged.

That the only boats obstructed by the bridge, have unusualy high chimnies, and "belong to Pittsburg, the rival of Wheeling in commerce and manufactures." *Supplemental answer, page* 44.

That the height of steamboat chimnies has been increased since the date of the bridge charter.—*Supplemental answer* 43.

That the boats obstructed are few in number.—*Supplemental answer* 44, *Original answer* 33.

That the obstruction seldom happens and only for short periods. (*Original answer, page* 30.

That the height of the chimney is unnecessary, or if necessary, may be lowered to pass the bridge.—*Original answer* 23, *supp. ans.* 44.

To each of these points of defence, the evidence furnishes a specific and conclusive answer.

1st. The Pittsburg packets are not the only steam vessels obstructed, nor are their chimnies unusually high. They belong to, but do not entirely constitute the first class. The same description of vessels ply between New Orleans, St. Louis, Louisville and Cincinnati, frequently ascending with their cargoes to Pittsburg, many of them being built there.

"Their chimnies (the Pittsburgh packets) are very high but not so high as some of the boats built at Pittsburgh for other trades."—*Capt. Ross, page* 73, *ans.* 18.

"Some very large boats have been built there—a great many very large first class boats."—*Capt. Whitten, page* 88, *ans.* 28.

"Frequently first class boats go to Pittsburgh from below Cincinnati and Louisville, with cargoes, and return."—*Capt. Pierce, page* 92, *answer* 6.

"There are many other boats plying on the Ohio river, above Louisville, not provided with means of lowering their chimnies, besides the Pittsburg packets."—*Ib. page* 94.

"Boats of all classes have been built at Pittsburgh."—*Captain Pierce, page* 95, *answer* 27.

"The steamboat Cincinnati was in the line trade between Pittsburgh and Cincinnati, in the year 1845, and her chimnies were equally as high as any that are now running. Several other boats have run on the Ohio river with their chimnies equally high, three or four years ago, and by experience of their advantages, high chimnies are always built on new boats."—*Captain Stone*, 166.

"The J. M. White, Grand Turk, the Meteor, St. Louis, Cincinnati, and other boats, have chimnies about as high as those of the Hibernia No. 2, and they ran on the Ohio river prior to 1847."—*Captain Klinefelter*, 168.

"The height of the largest class of steamboats running to St. Louis, are seventy five to eighty-two feet from the surface of the water to the top of their chimnies. Their pilot houses are from 45 to 51 feet from the water."—*Capt. Sparhawk*, 128.

"There are boats below the falls and on the Mississippi river, such as the Peytona and others of that class, whose chimnies are larger and taller than the chimnies of the Pittsburgh and Cincinnati packets"—*Captain Mason, (defendant's witness) page* 408, *answer* 6.

The table furnished by the surveyor of the port of Pittsburg, exhibits the date of the packet licenses, prior to the charter of the bridge.—*page* 246.

2d. The height of chimnies has not been increased since the charter of the Bridge Company, but has been the result of a gradual improvement since 1838 in the construction of steamboats, of which the chimney has not been the principal, but only a necessary accompaniment to the increased height of the decks, cabins, and pilot-house, and the length of the keel and boiler.

In June, 1838, the largest boats then built are stated by Captains Sanders and Dutton, in their Report to the War Department, as follows:

"The height of the highest chimney is about fifty feet; the highest deck and pilot-house about thirty-seven feet."—*Sanders and Dutton's Report, House Documents, 25th Cong. No.* 993.

"Their length was from 150 to 182 feet. The pilot-house of the St. Louis packets attains now to fifty-one feet; their chimnies to eighty-two feet."—*Capt. Sparhawk*, 127

"The Pittsburg packets measure from the water 49½ feet to the top of the pilot-house; their chimnies 76 feet; their length from 225 to 242 feet."—*Wells' Deposition*, 202.

The history of this increase in the dimension of boats, its commencement, progress, and result, is thus detailed, and marks the development of steam navigation on the Ohio, where its mightiest triumphs have been won.

"There is a great difference with regard to the length of the boats and the chimneys, and the size of the boats. The length, height, and depth of the hold have increased considerably. The cabins are now on the second deck, having been changed from the first deck, where they were at first. These changes were made because they were found to be more profitable, increasing the speed of the boat, and making them better adapted for carrying freight and passengers. The advantages are, that experience has shown these improvements enable the boats to carry more passengers by increasing the length of the cabin; they require a larger machinery, and consequently require a greater length of chimneys in order to produce a better draught, which is so necessary in generating steam. The speed of boats has been increased as they have increased their size and length. Increasing the height of chimneys has been found to increase the speed of the boat."—*Captain Haldeman, page* 61, *answer* 3.

* * * * * *

"Ten or twelve years ago a boat that was one hundred and eighty feet long was considered a very long boat; there are now many boats on the river over two hundred and fifty feet long; and for the last ten or fifteen years the boats have been built higher and higher, so that the chimneys of the boats are now in average at least twice as high as they were on boats fifteen years ago; the reason of the boats being built higher is for the purpose of getting more room between decks, and to make the cabins more roomy and airy; the reasons of making the chimneys more high, are for improving the draughts from the furnaces."—*Captain Ross page* 68 *answer* 3.

* * * * * *

Steamboats have been made very considerably longer the large class of boats from seventy-five to one hundred feet longer than they were formerly. They are also made very considerably higher in the boat and chimneys. The cabins used to be on the lower deck, but they are now on the next deck above and much higher. The main cause of these changes was to get room for more passengers, and to make the cabin cooler and more comfortable, and to give capacity generally, and to increase the speed; and to do more business: *carry more freight on less water; carry a great deal of freight on light draught*"—*Captain Amurtz, page* 76, *answer* 3.

* * * * * *

"In the length of boats there has been within the time referred to an increase of one-third at least, and some are now made double that boats were built fifteen years ago. There is very little difference now in the height of the boat to the top of the hurricane deck, or in the depth of the hold. I suppose the chimneys are now made one third longer than they were before. Boats are all built now with upper cabins, but the greater part were at the time built with the cabins below. The principal cause of the change of the cabins was, that they might accommodate a greater number of passengers. They will now accommodate four or five times the number of passengers they could when they were built below. The length of the boats was increased to gain speed, and carry a greater amount of freight on less water. There are many boats that will now carry as much freight on seven feet water, as boats twelve or fifteen years ago would on nine feet. The length of the chimneys was increased in order to obtain a proper draught. An increase in diameter will not have the same desirable effect as an increase in the length; but a proportionate increase in the diameter is necessary."—*Captain Washington, answer* 3, *page* 98.

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"The Pittsburg packets are usually much higher than boats passing the canal from the water's edge to the top of the chimneys, and are built of much greater length which necessarily compels them to increase their chimneys, in order to obtain a proper draught. The increase of length enables them to carry a much larger number of passengers and more freight, on less depth of water—*Jones answer* 7, *page* 99.

3d. The number of what are termed the Pittsburg packets, that will be obstructed by the bridge, are seven. But what is to prevent their number increasing? Two Sunday packets are now running; the same may ta

place on each day of the week, as the exigencies of trade and travel may require.

But supposing them to be only seven, and taking the estimated number of other boats of less dimensions to be 300, as stated by the defendants—still the disparity between them is not greater than between the number of regular steam packets plying between Liverpool and the ports of New York and Boston, compared with the other vessels trading with the same ports.

What would be thought if some petty corporation should undertake to reduce the capacity and dimensions of Atlantic steamers, by obstructing the channel through which they must pass to and from the ports of Boston and New York? Yet the western ports of Pennsylvania are equally under the protection of the constitution and laws. Vessels leaving those ports are inspected by the same officer, bear the same license, and are regulated by the same law—why not entitled to the same rights? The Pittsburg packets are far more essential to the commerce and prosperity of the State than are the sea steamers. Not to their number, then, are we to look for the injury done, but to the utility and public convenience interrupted. These vessels are accustomed to leave their ports daily, at a specified hour, and perform their voyage of one thousand miles to Cincinnati and back with unexampled precision and safety. They are the carriers of three-fourths of the travel and trade between the States passing along the Ohio river.

The Cunard Steamers surpass other sea-going steam vessels in the *height of their chimneys*, to a greater degree than the Pittsburg packets excel those passing through the Louisville Canal. (Bartol's Deposition, 337).

Would it be tolerated to shear their chimnies to such dimensions as might suit a bridge company, force them to hoist, and lower, and dodge in high floods through fifty feet of space?

What these packets are to commerce between the States, is shown by the following testimony:

"The most of the freight comes to Cincinnati in the large Pittsburg packets, and is there re shipped to places below in smaller class boats."—*Capt. Whitten, page* 85, *answer* 7.

"They average, annually, thirty trips each from Pittsburg to Cincinnati, and the same number from Cincinnati to Pittsburg, making in all for the seven packets, four hundred and twenty trips per year."—*Edwin Wells. Tables, pages* 202, 203, 204.

"Seven boats form the line, (daily;) their names are as follows:

Monongahela, which leaves Pittsburgh on Monday.
Hibernia No. 2, which leaves Pittsburgh on Tuesday.
New England No. 2, which leaves Pittsburgh on Wednesday.
Brilliant, which leaves Pittsburgh on Thursday.
Clipper No. 2, which leaves Pittsburgh on Friday.
Messenger No. 2, which leaves Pittsburgh on Saturday.
Isaac Newton, which leaves Pittsburgh on Sunday.

They are owned entirely by citizens of Pennsylvania.

Interrogatory 3d. State the history of that line; how the boats are owned; how long the line has been in full operation; how it has affected the trade, commerce, and travel on the Ohio river and the Pennsylvania public works, as to its amount, and as to safety, speed, and comfort.

The line was established in 1844, and the boats have performed their trips regularly since, except when prevented by accident, low water, or ice; the first set of boats were found to be entirely too slow and too small to meet the rapid increase of business which was attracted to them by their regularity: a second set, of enlarged size and greater speed, were then built, and continue to run; already a third set has been commenced; two new boats of greatly increased power and size will be put in the line in February next, to succeed the Monongahela and Isaac Newton; the boats have performed in all about 2,640 trips, averaging, it is believed, more than two hundred and fifty passengers each; including the crews nearly a million of persons have been carried on them, without the occurrence of any disaster by which life has been lost, or any serious injury done to any one of the boats; each boat is separately and independently owned and are in no wise connected with one another, except by an arrangement that they shall respectively depart from Pittsburgh and Cincinnati on their regularly established day of the week, and no other; the trade and business, as well as the comfort of passengers on the Ohio river, and especially as connected with the public works of Pennsylvania, have been undoubtedly greatly increased and promoted by the safety, speed, and regularity of this line.

Interrogatory 4th. What proportion of the passengers and freight that arrive and depart from Pittsburgh by the State works are carried by these packets?

Answer. Probably three-fourths of the whole amount during the season of high water when these boats run.

Interrogatory 5th. Are any distinctions made between these packets and other steamboats carrying freight from Pittsburgh; if yea, what is that distinction, and the reason for it?

Answer. The packets are generally preferred by shippers of goods to the amount of fully 20 per cent. in the rates of freight, owing to their greater speed and safety.

Interrogatory 6th. What effect would be produced upon these boats by detention at Wheeling on their trips, by an obstruction to navigation here, and what would be the loss to the boats and their owners?

Answer. Detention at Wheeling, or any other point, by any obstruction for a single day, would cause any boat of the line to lose an entire trip down and up, because it would prevent her departure on her regular day, and oblige her to lie over for the recurrence of that day; the loss of earnings to the owners of the boat would in this, event, (if in the season of high water,) amount to probably fifteen hundred dollars, as this is about the average receipts of the boats on each trip down and back.

Interrogatory 7th. What is the average cost of these packets; how long do they last; and what their weekly expenses?

Answer. The averave cost of these boats may be stated at thirty thousand dollars each; the boats built within the last 20 months, viz: the "Brilliant" and the Messenger No. 2, cost nearly forty thousand dollars each, and the two new boats now building will cost more; the size, power, speed, and cost of these boats increase constantly to meet the incresing requirements of the public for still greater expedition and capacity.

They last about five years; the expenses when running average on the largest of the boats twelve hundred dollars each per week; the expense of laying over a week in the business season would be fully eight hundred dollars.

Interrogatory 8th. What is the amount of private capital employed in the business of transportation on the Pennsylvania State works, terminating at Pittsburgh?

Answer. About seven hundred thousand dollars."—*Deposition of Thomas S. Clarke, record page* 260.

The pretence that the bridge will *seldom* obstruct navigation, and only for periods of *short duration*, is also contradicted by the proof.

But if the packets are subject to *any* obstruction, their certainty and precision of communication, and their chief merit as vehicles of commerce, must of necessity be impaired. An hour's delay at Wheeling may occasion twenty-four hours' delay at Pittsburg or Cincinnati, where connection is formed with other lines for the east, west, and south. Trade and travel will direct their

course to channels not subject to such interruption. It is admitted by the defendants, as has been seen in their memorial to the Virginia Legislature, that the packets will be obstructed on twenty feet water. *Memorial, page* 57.

Their own Engineer proves that such obstruction will occur on not more than sixteen or eighteen feet:

"Some of them [the packets] would not, without joints, be able to pass on a flood of not more than sixteen or eighteen feet."—*Israel Dickinson, page* 386, *answer to* 30*th cross interrogatory.*

Now, the record contains a table, before referred to, exhibiting from the Wharf Master's register, the daily height of water at Wheeling, from 1838 to 1848, inclusive, which shows that this obstruction is liable to occur in ten several months of the year, and continue from two to ten days. *Record, pp.* 295–305.

From this table it appears the occurrences and duration of floods over twenty feet, have been as follows:

January, 1839. Two successive days, over twenty feet.—*Page* 296.
1841. Two days over twenty feet.—*Page* 297.
1842. Two days over twenty feet.—*Page* 299.
1843. Four days from twenty to twenty-six feet.—*Page* 300.
1847. Seven days from twenty to thirty feet; standing five successive days over 25 feet; two days at 30 feet.—*Page* 304.
1848. Five days from twenty-one to thirty feet.—*Page* 305.

February, 1840. Three successive days from twenty to twenty-eight feet; five days from twenty to thirty-eight feet; eight days from twenty to thirty-six feet, standing 36 feet two days in succession.—*Page* 297.
1842. Five days from twenty to thirty-one feet; three days in succession, twenty-eight feet and over.—*Page* 299.
1846. Three days from twenty-two to twenty-six feet.—*Page* 303.
1847. Four days from twenty-two to twenty-eight feet.—*Page* 304.

March, 1838. Four days over twenty feet; seven other days in succession from 20 to 26 feet.—*Page* 296.
1840. Three days from twenty to twenty-eight feet; five other days from twenty to thirty-eight feet; eight other days from twenty to thirty-six feet, two days standing at thirty-six feet.—*Page* 297.
1841. Nine successive days from twenty-one to thirty-four feet; six days in succession over thirty feet; and continuing over twenty feet three first days in April, being twelve days successively over twenty feet.—*Page* 298.
1842. Seven successive days from twenty-one to twenty-six feet.—*Page* 299
1845. Six days successively from twenty to twenty five feet.—*Page* 302.
1846. Three days from twenty to twenty-three feet; five other days from twenty-three to thirty-five feet; two other days twenty feet.—*Page* 304.
1847. Five successive days from twenty-one to thirty feet; two other days from twenty to twenty-two feet.

April, 1840. Two successive days from twenty to twenty five feet.—*Page* 297.
1841. Three successive days from twenty to twenty-eight feet.—*Page* 298.
1843. Two successive days at twenty feet; six other days from twenty-two to twenty-six feet; three days in succession 25 feet and over; three other days twenty-five feet.—*Page* 300.

May, 1838. Four successive days from twenty to thirty-one feet; three days in succession over twenty-five feet.—*Page* 295.
Six other days from twenty to twenty-five feet.

June, Two successive days over twenty feet.—*Page* 296.

July, One day twenty-two feet.—*Page* 303.

October, Two successive days over twenty feet.—*Page* 304.

November, Four succcssive days from twenty-two to thirty-two feet.—*Page* 304.

December, 1841. One day over twenty feet.—*Page* 298.
1842. Two successive days over twenty feet.—*Page* 299.
1846. Eight successive days from twenty to twenty-seven feet; one other day twenty feet.—*Page* 303.
1847. Eight successlve days from twenty to thirty-eight feet, being six days twenty-five feet and upwards; three days thirty-five feet and upwards,—*Page* 304.
1848. Seven days from twenty to thirty-one feet.—*Page* 305.

The foregoing results show a liability to obstruction, of the first class of steamboats, ten different months in the year; and a continuance of this obstruction in the throng of the fall and spring seasons, varying from three to twelve days in the months of January, February, March, April, November, and December. And with this is to be borne in mind that two packets must pass the bridge each day—one ascending, the other descending the river. Upon such interruptions to the principal carriers of commerce between the States, no comment is necessary.

5th. High chimnies being in use before the charter of the bridge, the burden of proof to show that they are unnecessary—that other means may be adapted to the same end—or that they may be lowered without expense danger, or delay—is upon the defendants.

They have undertaken to show this by the testimony of some witnesses in Philadelphia Wheeling, Cincinnati, and Louisville. A few observations will show that this testimony establishes the necessity of chimnies as used on the packets.

It is evident that the Philadelphia witnesses form their opinion from experience of locomotive engines, eastern steamboats, and sea going vessels. Now, to judge of the proper machinery of a steamboat, requires knowledge, not only of the power of steam, but of all the exigencies of navigation in which the vessel may be engaged—the peculiarities of the stream, and her architectural construction. Of these, the Philadelphia witnesses are profoundly ignorant. The eastern steamboat is short, low, deep draught, and wide enough to admit from six to eight boilers, and runs in deep water. The Ohio packets are long, narrow, high, light draught, and run on shallow water. Other differences might be enumerated, but these are sufficient to expose the absurdity of inferring from eastern experience what machinery was adapted to western waters.

When the western chimnies are said to be seventy feet high, that is not to be taken as the length of the chimney, but as the whole elevation of the boat and her chimnies. From

that is to be taken the height of the hurricane deck, above which the chimnies project. This is usually twenty-nine feet, leaving forty-one feet as the length of chimney above deck.

This will be illustrated by a comparison between the Brilliant one of the tallest Pittsburg packets, and the City Iceboat, which is taken as their principal example by the Philadelphia witnesses.

The Brilliant is two hundred and twenty-seven feet long; the top of the hurricane deck, is twenty-nine feet above the surface of the water; her chimnies projecting forty-two feet, which brings their top seventy-one feet above the water's surface. She is propelled by three boilers, thirty feet long, placed *above* the main deck, and just below the main cabin, their top being 22 feet above the water's surface.

The City Iceboat has eight boilers, twenty-six feet long, placed in the hold, with chimney forty-five feet above the boiler.

And this length of chimney, equal to any of the western packets, and exceeding most of them, is established by the defendants' own testimony as the proper length of chimnies.

"What length do you deem sufficient for an ordinary Pittsburg packet, burning coal and using blowers.

Answer. I would not deem it advisable to build their chimnies more than *forty feet above the hurricane deck*."—*Anthony Harkness, engine builder, of Cincinnati, page* 348.

"Those not intended to pass through the falls, I have built somewhat higher, in one or two instances as high as fifty feet.—*Ib.* 347.

"I believe all above *forty-five feet* above the hurrican deck, is useless."—*Thos Taylor, Wheeling engine bvilder page* 362.

And this is fully confirmed by the testimony of the Philadelphia witnesses, both as to river steamboats and sea-going vessels.

In the reference to the constructionof steamboat boilers and engines, what general height of chimney for natural draught has your practice convinced you was sufficient?

Answer. About forty to fifty feet *above the boilers* for boats of the larger class."—*Jas Tull, page* 332.

"I should think from forty five to fifty feet would be ample for the longest boat with her natural draught."—*John P Levy, page* 317.

"What is the general length of U. S. steamers from the *top of the boiler?*

Answer. None of those that I have named are over forty feet."—*Wm Taggert, page* 332.

What height of chimney have you found suitable, using natural draught alone?

Answer. From forty to fifty feet." * * * *Lewis Taws* 327.

"With boilers properly constructed, using bituminous coal or wood, from forty to fifty feet, sometimes circumstances vary, and we would require a little different length of pipe."—*Barnabas H Bartol, page* 337.

One very material circumstance, which, in the estimation of Mr. Bartol, would make a variation, is the fact, that beside the greater length of keel, the Western boat has not only a high passenger cabin *over the boilers*, but on the top of that stands the officer's cabin, called "Texas," and still higher, the pilot house, 49 feet from the water.

Place the eastern chimney over the boilers of the Western boat, and it will stand above the water higher than any Pittsburg packet, and about the height of the tallest New Orleans and St. Louis boats.

The defendants have themselves thus proved, that the height of the packet chimnies is not unnecessary, and that their height above the water can only be reduced by reducing the height of the boat and placing the boilers in the hold, an impossible change on the Ohio river.

Mr. Bartol lays down this axiom—"You must carry the chimnies above the hurricane deck sufficiently to carry off the combustible matter." (rec. p. 338.) The Messenger chimnies, the tallest of the packets were only forty-seven feet above the hurricane deck, being seventy six feet from the water, they cleared her of sparks. Seven feet being cut off to pass the bridge; her decks are now covered with combustible matter, falling about her wheels one third the distance from her stern. *Capt. Woodward, p.* 207.

One additional fact of great significance in this enquiry is stated by Barnabas H. Bartol. p. 337. It shows that the improvements discovered by Western boatmen, in generating steam, are being introduced on the Ocean Steamers.

"*The chimnies of the Cunard steamers project above the main deck about forty feet. The fuel used is bituminous coal with natural draft.*"

This single fact renders all argument as to the utility of tall chimnies superfluous, and disposes of all the theories and opinions that can be adduced on the subject. It shows that enterprise on the Ohio river, in respect to steam navigation, is leading the way and demonstrates the impolicy of imposing any conditions that may retard its progress. A brief examination will dispose of the various expedients to supply the place of natural. draught. These expedients are steam jet, exhaust blast, and blowers.

The first is proved by Col. Long to be adapted only for locomotives.

"Any that have attempted the use of blowers on the western waters, that I have seen, or a great majority of them, have burnt their boilers and thrown away the blowers; very few have them now in use on the Ohio river; I consider the natural draught preferable to that attained by any other artificial means that I have seen."—*Benjamin Minnis engine builder*, 152.

"What advantage has this mode of increasing draft on boats designed for the Ohio river, over the blowers, and other artificial substitutes resorted to on eastern boats?

Answer. It requires less machinery. I do not know that it is any safer; it is more certain in its application; we have not always succeeded with blowers on the steamboats here; I think it is more certain, and less expensive and less troublesome; it is more certain, because we have not always succeeded with blowers, and when we have put up high chimneys, we have always gotten a draft."—*Tho. K. Litch engine builder* 155.

"I think the natural draught is more effective and less dangerous to the safety of the boat than the artificial draught obtained by blowers, or any other artificial substitutes that I am acquainted with. Blowers have been used on some of the boats on the western rivers. I believe that they are not now used on these waters. The increased diameter and length of the chimneys have superseded all artificial means of increasing the draught of

chimneys, so far as I am acquainted with the facts and circumstances of our navigation."—*James Thompson, engine builder*, 159.

"The reason why ocean steamers use blowers, is that they cannot use chimneys high enough to give them a natural draught, on account of the action of the wind and rolling of the ship. They therefore resort to blowers to attain the draught without subjecting them to this inconvenience. The boilers of ocean steamers are shorter than ours on the rivers, and the blower is therefore more effective."—*Ibid* 160, *answer* 2 *cross interrogatory*.

"What advantage has this mode of increasing draught on boats designed for the Ohio river over the blowers and other artificial substitutes resorted to on eastern boats?

Answer. It is safer, more certain, and less expensive. Safer from the fact that there is less danger from sparks, less danger of burning the boilers. In the natural draught the current of air is inwards; in the artificial draught it is outwards. The natural draught is the most regular, and not so liable to burn the boilers. As the artificial draught is irregular the heat is irregular, and it is directed with greater intensity at some times than at others; and is some times too intense, and thus burns the boilers The more regular the application of heat the more regular the draught, and the greater the safety in travelling. The keeping up of the fans, and other artificial means is attended with expense. When natural laws can be brought to act, they act not only with more uniformity but with less cost. I regard the improvements in steam navigation by the simple expedient of high chimneys as one of great importance, founded on principles of science, confirmed by experience, and that could not be supplied by the use of blowers, or any other artificial means. The present height of chimneys is necessary, and might be increased to the advantage of navigation."—*James Nelson, engine builder*, 146.

"I am decidedly of the opinion that the draught produced by means of high chimnies, is better *adapted to the navigation* and at the present low prices of wood, is more economical in all respects than the draught produced by the fan blast, or by that of the steam jet."—*Col. Stephen H. Long*, 138.

The last position taken on the subject by defendants, is, that the packet chimnies may be lowered by joints and hinges. This is urged on the ground that the chief number of boats, estimated at 300, navigating the Ohio, in order to pass through the canal, lower their chimnies. But this furnishes additional demonstration of the utility of chimnies higher than can pass the Wheeling bridge, since expense and trouble is incurred in order to give greater elevation, than is allowed by the obstruction. The Pittsburg packets run between that port and Cincinnati, having no occasion to pass around the falls; it is, therefore, not easy to perceive on what principle they can lawfully be subjected to the condition of those going below, in whose path there is a great natural obstacle like the falls at Louisville. The position assumes the power to place over the channel an impediment equal to a *cheveaux de frieze*, or causeway of rocks sunk in the channel.

That the requirement to lower the chimnies is not any natural incident of navigation, nor act of Congress but exists by mere regulation of the bridge company, that is attended with "additional expense," and their use causes a "little trouble," is expressly admitted by the defendants in their memorial to the Virginia Legislature, (rec. 57, 2d and 3d par. from bottom. That boat owners are unwilling to obey this "requirement" and "refuse to remodel their chimnies," is also admitted in the supplemental answer. (rec. p. 44.) That navigators are justified in the use of such chimnies, and in their refusal to obey a requirement, causing great trouble, expense and danger, putting in jeopardy the safety of the vessel, its officers, crew, passengers and merchandize, is further demonstrated by the following testimony

"What is the additional cost of so constructing the chimnies, with joints and hinges, as to lower them for obstacles overhead; what delay, expense, or hazard of any kind, either to boat, crew and passengers, will necessarily or probably attend such process of lowering and hoisting the chimney tops?

Answer. The chimneys arranged for lowering cost considerably more than those that are not. I have seen some fixtures, for that purpose about chimneys, that cost from thirty to forty dollars There is some delay in lowering and hoisting such chimney tops, consequently they are more expensive. There are some risks to run of doing damage. I speak now particularly of lowering and hoisting at Louisville, where I have known damage to be done by chimney tops falling, and mashing up both the tops and the lower parts of the chimneys. I don't mean falling to the deck, but the upper part, which is made fast by hinges, swinging down against the lower or standing part, and mashing both, which is a considerable damage. I have known a boat to go into the canal to the bridge, and be obliged to back out. I do not know of any other particular accident where persons are injured: although there is some risk from the use of the poles; and machinery necessary in lowering and getting up the chimneys, should they give way."—*Captain Haldeman page* 62

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"My opinion is that it would be a disadvantage to curtail the height of chimnies, or the size of the boats. Any obstruction that would cause them to raise or lower their chimnies, would *necessarily* be accompanied with more or less expense and delay, and with *less safety*, than where the lowering and raising of the chimnies was unnecessary."—*Ib page* 62, 8th *ans.*

"The process of lowering and raising chimney-tops, have some experience in, where I had the joints and hinges eight feet below the top of the chimney; my chimneys were not high, much lower than many others; I could get mine down and up again in an hour, but there would always a great deal of danger in the operation to life and property."—*Charles Ross, page* 68, *answer* 4.

"The boats, as they now are, are a great improvement from boats of former times; what improvement there may take place hereafter I can't say. If low chimneys must be used, it would be going back to the old worn-out principle again. What can be done must be left to the inventions of hereafter; fixing these tall chimneys cannot be well done without great expense and great danger.—*Ib. page* 69, *answer* 8.

"My opinion is, that chimneys cannot be constructed so as to be lowered and hoisted without delay, considerable and imminent danger ts life, limb and property."—*Ib, page* 74, 26, *answer to Cross Inter.*

"I do not remember the additional cost of so constructing the chimneys with joints and hinges for the purpose of lowering them. The delay attending the process of lowering and hoisting the chimney-tops is very considerable. *It has frequently detained me from two to five hours, and then has several times broken the chimneys.*"—*Captain Anshutz, page* 76, *answer* 4.

"The additional cost of so constructing chimneys with joints and hinges as to lower them for obstacles overhead would be I suppose about seventy five dollars in the building of the boat; to make the alteration in the chimneys after the boat is built would cost, I suppose, one hundred dollars; it requires about an hour to lower and hoist the chimney tops in going through the canal at Louisville; it requires us that length of time; our fires are then down, going through the canal, but it would take more time to slacken the fires and let steam down, which is necessary in order to lower and hoist the chimneys when the boat is under headway on the river."—*Captain Whitten, page* 83. *Answer* 4.

"What is your opinion of the practicability and expediency (consistently with reasonable safety, convenience and profit) of constructing the Pittsburg packets which ply in the middle and higher stages of water, with low height of chimneys, as described above?"

"I think it could not be done, consistently with the length of the boat and the boilers, and therefore neith

with the safety, convenience, or profit of the boat."—*Ib. page* 84. *Answer* 8.

"I should think it would cost double as much to construct the chimneys with joints and hinges so as to lower and hoist them, taking into consideration the apparatus necessary for the purpose to do it with facility and safety; the delay attending the process of lowering and hoisting the chimneys must be considerable, and it requires the time of a large portion of the crew to do it with facility; I should suppose that, with strong apparatus, the danger in lowering and hoisting the chimneys would not be much, but should any part of it give way, it would be attended with serious consequences, in lowering the heavy chimneys, to both boat and crew."—*Captain Pearce, page* 9.

"Boats must be delayed otherwise than by lowering their chimnies. They must keep down their steam on coming to a bridge, and it requires time to do it, and raise steam again afterwards."—*Ibid page* 97, *ans.* 38.

"There is very great danger from the breaking of the hinges; falling and breaking through the hurricane roof; the danger of falling and killing some portion of the crew in attempting to lower them; in bending up and so disfiguring them as to render it necessary to take them down in order to repair them, which is always attended with a good deal of expense, as well as delay."—*Captain Washington, page* 3, *ans.* 22.

"I look upon high chimneys as essentially important to steamboats on the Ohio river. The height of the chimneys, with diameters proportioned, is essential to the draft. I have often added to the height of chimneys after they have been built. We have been enabled to lessen the number of boilers by increasing the height and diameter of the chimneys, this we have been enabled to do by means of the increased draft It is an important desideratum on the Ohio river to lessen the weight of machinery, so that the boat may require as little water as possible, and this end is gained by increasing the chimneys and diminishing the boilers."—*James Nelson, engine builder and constructor of over* 50 *engines since* 1837, *record page* 56.

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I look upon the lowering and raising of such chimneys as impracticable, without resorting to extraordinary means subjecting them to premature destruction, destroying them before their time. The contingent expenses I am not much acquainted with. The removing of such chimneys would cost some five or six hundred dollars each—chimneys such as I have spoken of for the Buckeye and Keystone State. I have made no machinery that could answer for lowering and raising such chimneys as these. I would not like to undertake to lower them in dark and stormy weather. The present roofs are rather light to support the handling of such chimneys. They would require additional strength."—*Ibid.*

"We get a better draught by larger and taller chimneys, and lessen this amount of boiler; this lessens the weight of the machinery, and in so doing, lessens the draught of the boat; to lessen the draught of the boat is deemed a very important matter on the Ohio river.—*Benjamin Minnis, engine builder and constructor of over fifty engines record page* 157, *ans.* 3.

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"For lowering and raising such chimneys as they have at present, the machinery would cost from 200 to 250 dollars to a boat on the packet boats; such as I put on common boats would come to 150 dollars, on smaller boats; it is very injurious to chimneys, lowering and raising injures them; I have seen them fall; it makes a great difference in the lasting of chimneys; the more they are disturbed the sooner they wear out; I think it would make a third difference, that they would wear out a third sooner; a set of chimnies for the Hibernia No. 2, and Brilliant, would weigh about 3000 pounds and worth 9 cents per pound; I think 30 hundred for each chimney is under the weight, worth 9 cents a pound put up; I have seen boats stopped a good while on account of lowering and raising their chimneys."—*Ibid.*

"I think the present height of the chimneys of the packets necessary to their successful operations, unless some other mode of causing draft could be discovered. It would be practicable to make joints in these high chimneys. It would add to the expense and be inconvenient to lower these chimneys, and I would have no doubt that there would be times at which they could not be lowered, in dark nights, or in stormy and windy weather."—*Thos. Litch, Engine builder, and constructor of from* 60 *to* 80 *Engines. Record, page* 155, *ans.* 3.

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We could by a change in the number and size of our boilers, and by making our furnaces and flues to correspond, and by a proper increase in the diameter of our chimneys, gain the necessary draft with lower chimneys than those now used by several of the Pittsburgh and Cincinnati packets. But we would have to make our boilers shorter, and, consequently, have more of them. They would take up all the width of the boat, which would be a serious inconvenience; the weight would be more in one place, which would make it more difficult to keep the boat straight, she being more liable to hog by having the weight all in one place. There would be a greater weight of boilers and fixtures with them than there would be if the boilers were long, and it would require more fuel; it would also be more expensive."—*Ib.* 115, *ans.* 15.

"The experience of steam engine builders, and owners of boats, has taught them, that by increasing the length of their boilers. and also the height and diameter of their chimneys, they greatly increase the power of the engine and the speed of the boat without materially increasing the weight of the machinery. I believe, that instead of shortening the chimneys of the class of packet boats now in use, they could be increased in height beyond what they now are with advantage. Upon our western rivers, when steamboats encounter shoal water, it becomes a matter of great importance to them to gain an increase of power and an increase of speed without materially adding to the draught of the boat. By far the most effective way yet devised to gain these objects, has been the improvement above referred to. The length of boilers and increased height and diameter of the chimneys, I regard as an exceedingly valuable and indispensable improvement on boats designed for the navigation of our western rivers."—*James Thompson engaged in steam engine business* 25 *years Rec. p.* 159.

It is practicable; but in stormy weather and in dark nights it would be attended with some danger to those who would be engeged in the operation. In a violent storm it would be too hazardous for any crew to undertake it. If the deck should be covered with ice, it would increase the danger; and in winter, when it rains or snows, and a boat is on her passage, she is very apt to have a slippery deck. If the chimneys should come down, in the operation of lowering or raising them, there would not only be danger to the hands engaged in it, but it would necessarily endanger the lives of the passengers—the chimney, from its weight, would be very likely to break through the hurricane deck. and fall into the cabin. When chimneys require to be lowered by means of hinges, they require to be constructed of much heavier iron, in order to sustain the weight that is on those hinges when they are turned over. This increased weight, at such an elevation as the chimneys now have, would necessarily have an injurious effect on the running of the boat, in rendering her more liable to roll. It would also slightly increase the draught of the boat in the water. Chimneys, under the operation of lowering and raising, would not last near so long as they would do when they were permitted to remain stationary—*Ib.* 160.

"I have constructed chimneys to be raised or loweoed on the telescope plan, but I do not think it would be applicable to our trade, on account of the difficulty of keeping them steady in their position when reared to their full elevation.—*Ib.* 160, 161.

"I have had a good deal of experience in lowering chimnies in order to pass the bridge at Louisville. The chimnies of the "Eldorado," which I commanded, were 42 inches in diameter, and 34 feet above the hurricane deck; ten feet were lowered. The chimnies in some of the Pittsburgh and Cincinnati packets are 5 feet in diameter, and 58 feet above the hurricane deck. It was always a work of a great deal of trouble, loss of time, and danger to lower chimnies no longer than those of the "Eldorado," with all the machinery and skill that could be used. And in windy weather I have been prevented from raising them, and had to run fifty miles before they could be raised, at a sacrifice of time in running. And I have always had to stop to raise my chimnies, and consider it would be very unsafe and hazardous to undertake it while the boat was under headway.

The difficulty is also increased at night and in stormy weather, and I do not think that the decks of the steamboats are sufficiently strong to bear the weight or machinery necessary to lower the chimnies of the Cincinnati packets. even if it were practicable. The boats leaving Pittsburgh in the fall and winter season, pass Wheeling at night, and usually calculate to pass before daylight ascending. The height of the chimnies by increasing the draught of the flues, increases the power of the boat without adding much to the weight of the machinery, and lessens the number of boilers required. Boats of a large size can run on lower water than before."—*Captain Stone,* 165.

"I should think it would endanger the lives of people on board, particularly the pilot, and other men whose business require them to be standing about; there would

be danger of wrecking the cabin if the chimnies should fall, which would be very likely to occur in stormy weather, I think; I have seen nights on which we were running on the river, when I would not attempt to lower chimnies—I mean stormy weather; a heavy side wind would blow the chimnies off the hinges as they would be lowering them; in dense fog and smoke, at Wheeling, if a boat was to have her chimnies lowered she might strike her chimnies from not being able to distinguish the highest point of the bridge, and such smoke and fog at Wheeling are of common occurrence.—*Captain Klinefelter*, 168—169.

"Interrogatory 12th. Would the lowering or raising of chimnies have any effect on their duration? If it would, state what it would be, and what the cost of renewing them.

Answer. The chimnies generally last about three years; under the lowering and raising I do not think they would last more than half that time The cost of a new set of chimnies, for a boat like the Hibernia, is about six hundred dollars.

Interrogatory 20th. Would not increasing the diameter of chimnies, in your opinion, give sufficient draught without making them as high as those of your boat?

Answer. In the first place, I believe it would not; and, in the second place, there would be danger of the boats being destroyed by fire, the chimnies not being high enough to carry the sparks clear of the hurricane deck." —*Ibid.*

"Another advantage from high chimnies is found in carrying off the sparks clear of the boat, instead of their falling on the deck Again—a stern wind will arrest the smoke in front of the pilot house, and in a dark night will sometimes keep the pilot from seeing and navigating the boat as well as he would do if the chimnies were higher, and would carry the smoke off above the boat." *Chas Batchelor, capt and pilot, p.* 178.

"I consider the raising and lowering of chimnies a very dangerous operation; not only to those engaged in it, but to the passengers in the cabin underneath. I have seen weather within the last month when the decks were so icy that a man could not keep his feet without holding on to something, and when it would be impossible to use rigging in any way, because it would not reeve through the blocks. Such weather is of very frequent occurrence during boating season in the winter time; the difficulties would be increased in stormy and windy weather; in high winds we would be afraid to take the guy rods or stays from the chimneys, which must be done in order to lower them, because the wind would carry the chimneys away on the removal of that support from them; such winds are very frequent.—*Ib.* 179.

"I have seen no plan, and I know of none, by which they can be hinged in such manner as to be lowered and raised The iron in the chimneys is not sufficiently strong to bear the operation; and a weight of iron of sufficient strength would be dangerous to the boat in causing it to roll, and so endanger the safety of the boilers. With the size of iron that we now use, the chimneys last in the neighborhood of three years, when they remain fixed without being moved. I have no experience of the effect of lowering and raising the chimneys, but in my opinion chimneys of the size now in use on those large packets, if lowered and raised as often as would be required by the present height of the Wheeling bridge, would not last more than half that time. A pair of our chimneys would cost between 600 and 700 dollars."—*Captain Dean* 182.

"*It would be dangerous to life and property.* In going down in high water, which is usually in the winter season, we usually reach Wheeling in the night. At such periods it is often stormy and snowing, and icy about the hurricane deck. If any part of the machinery for lowering and raising the chimneys should break, and the chimneys come down, there would be danger to all below them. The passengers in the upper berths are within from 18 inches to two feet from the hurricane deck, which is generally (in the packets) made of ¾ inch boards, and they would be exposed to the risk of chimneys crushing the hurricane deck. There would be danger, also, to those around on the outside working with the said chimneys. The danger would be increased in stormy weather."—*Ib* 182, *ans* 14.

"I think there is no question about the utility of high chimnies; they have been experimenting a number of years, and every year the height and diameter of chimnies appears to be increasing. When the Brilliant came out, in 1848, her chimnies were eight feet lower than they are now; we ran her for a season, and found she did not come up to our expectations in point of speed—did not make steam sufficient. The owners consulted, and concluded to put in an extra boiler. Before doing so, they thought they would try the experiment of lengthening the chimnies, and they added eight feet to the chimnies, and they made no other alteration except in the grate bars. After that we made as much steam as we wanted, and added to the speed of the boat every way."—*Capt. Grace*, 188.

"I think that chimnies, such as those of the Messenger No. 2, if lowered as often as they would require to be in passing under the Wheeling Bridge, would not last half as long as they would do without being lowered and raised at all. A pair of chimnies such as those of the Messenger would cost some six hundred or seven hundred dollars."—*Capt. Woodward*, 211.

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"I have seen chimnies lowered on the Monongahela river. It takes from half an hour to an hour to lower them. They generally unscrew the guy rods and have them ready while the boat is floating; if it is a calm day, they do not stop. They generally raise them going up, when they land at Williamsport. *They smashed their whole deck there once.* The derrick caught in the bridge after lowering the chimnies, before they got the derrick down. They ran against the bridge, which drove the derrick through the boat, through the hurricane roof It cost her, I think, $150 to repair. Upon one occasion a man was sitting with his feet against one of the chimnies of the Baltic, and they lowered the chimney, he fell down into the chimney, what we call the britches. They got him out alive, and he got well; he was pretty well roasted. The man was drunk and asleep when the accident occurred."—*Ib.* 212, *ans.* 8.

I have always found it very troublesome. In my early experience the chimneys were low and we had little trouble, as we passed without lowering them; since the chimneys have been increased in height, so that joints were required, we found it very troublesome. On the Cambray we had four rings to lower; it is very troublesome in dark nights and stormy weather particularly so; we lost one night there; it was so dark that we could not do anything with her from darkness and storm. In cold weather with sleet falling and freezing, it becomes so slippery that we can't do anything; there was one night when I came near falling overboard."—*Captain Forsythe*, 217.

* * I have known the hinges to break, to fall and go through the hurricane deck into the cabin." * * *

*Ibid* 213, *answer to* 3 *Interrogatory.*

"What effect would the frequent lowering and raising of chimnies have on their duration?

Answer. I should not say that they would answer more than half as long; it is severe on chimnies; iron that would last for a considerable time if allowed to stand, rendered useless by the jolting from removing it. It is very common observation among engineers, when chimnies come to get old, that they will not stand going under the bridge; that they will not stand being lowered; mean those that would last 6 or 7 months, or longer, allowed to stand without being lowered."—*Ibid.*

"The dangers to which navigators would be exposed, if they should attempt to pass under the bridge when the chimneys would not go clear of it, would be those from the falling of the chimneys; they must come down if they strike the bridge; and *the captain and the pilot, if they should be at their posts, would be in danger of being killed by the falling chimneys*, and all persons standing around would be in danger from the same cause, as well as those below in the cabin, as the chimneys might go through and in all probability would do so.

If they had hinges for lowering their chimneys, I have seen stormy nights when it would not do to attempt until the storm should be over; I have seen nights when the storm continued throughout the night, during the whole of which it would not be safe to attempt to lower the chimneys; if one of the Pittsburgh and Cincinnati packets should be detained for 12 hours at the bridge, she would be greatly hurried at Cincinnati at discharging and taking in her freight; and, if she should meet with bad weather after leaving the bridge, she might not reach Cincinnati in time for her place in the line, and would then have to lie by for a week."—*Captain Reno*, 225, 226.

"We had to lower about 12 feet of the chimneys of the last boat that I was on to get under the bridge at Louisville—the stone bridge over the canal. We always did consider it a nuisance to have to lower our chimnies there. I always did. I never took any note of the time consumed in passing under the bridge. It always consumed more or less time. It was injurious to the chimneys. I think that they will last at least one-third longer if a point of time if they be permitted to remain without being moved. We cannot let down the tops, we cannot lower and raise them, without jarring the chimney more or less."—*Captain Gray*, 231.

"I spent some 50 dollars in an apparatus to lower and raise my chimneys on the Pennsylvania to expedite the operation. I have never yet been able to obviate the jarring. I would not put a similar one on a boat now. It has always been a great trouble to me to lower and raise my chimneys, and I never could do it without jarring them more or less. In 9 times out of 10 the chimney would not come back to its right place. We would have to get a ladder, and send a man up with a chisel, to get the top in its proper place."—*Ibid* 233, 3d *answer*.

"The lowering of the chimneys is found to be very troublesome and expensive duty, sometimes requiring more deck hands than it would otherwise be necessary to keep on board; and the joints and hinges require frequent repair to keep them in order. On one occasion in passing under the bridge over the Monongahela river with the steamboat Consul, the stream was found to be higher than was supposed by the pilots, the boat was drawn by the force of the current under the bridge, her pilot house torn off, and she otherwise injured. The Consul belonged to our line of packets.—*General Morehead, President of the Monongahela Navigation company, record page*, 276.

The effect of shortening the chimnies is also proved by the experience of the Messenger, whose chimnies were shortened seven feet, in order to pass the bridge, on the 10th of November.

"The shortening of the chimnies injures our draughts, and therefore diminishes our steam. A great deal more of coal and sparks, dirt from the chimnies, fall on the roof now than did before the chimnies were cut off. Since the chimnies were cut off, we are covered sometimes with sparks, three times as much as before the chimnies were shortened, or more. Before, they always cleared us pretty much; the sparks usually cleared the stern of the boat. Now they fall about her wheels, which is something like one-third the length of the boat."—*Capt. Woodward*, 267, *ans.* 9.

"We don't make steam as well as we did before her chimnies were cut off, and the more steam we carry, the faster the boat runs. The cutting off the chimneys increases the draught in this case."—*John O'Neal, First Engineer of the Messenger*, 214.

To these may be added the testimony of witnesses on the part of the defendant, and of Col. Stephen H. Long, the Superintendent of the United States Navigation Improvements on the Ohio river.

George Norton, Wheeling Steamboat Captain, Record page 365.

"There is a great diversity of opinion among boatmen, as to the means of increasing the draught. Some boats raise their chimnies, while others, as I believe, change the position of the grate bars; as a *general thing*, boats, when they attempt to increase the draught, raise the chimnies. * * *"

Samuel Mason, Wheeling Steamboat Captain, Record, page 408.

Question 7: "What, in your opinion, are the advantages of chimnies of large diameter and great height on boats similar to your own, designed for the packet trade?

Answer: My opinion is, they give a draught. They are up to effect that purpose. Such chimnies are advantageous to boats in the packet trade. A boat must have good chimnies to give her a draught."

Col. Stephen H. Long, Record page 137.

"What purpose is served by high chimneys, as now, used on Western steamboats, and what their advantages as compared with other means of procuring draught, such as steam, jet, fan blast, and blowers? State fully your opinion, and the results of your own experience and observation on the subject.

Answer, The draught of a chimney, or rather its force is measured by the difference between the weight of the confined column of air rarified by heat in the chimney, and the weight of an equal column of atmospheric air, of ordinary temperature, the height of both columns being equal to that of the chimney and the transverse section of both, respectively, being equal to that of the throat or smallest portion of the chimney. Of course, the higher the chimney, the greater the difference in the weights of the two ærial columns, and the stronger the draught.

The chimneys of locomotive steam engines are necessarily very low. In these a very powerful draught is produced by the principle called the steam jet, which depends on elasticity, velocity and weight of the steam employed for this purpose, and the frequency of the puffs into the chimney.

A similar result has often been produced by the application of the fan blast, by which a volume of atmospheric air is driven, instead of being drawn, as in the case of the steam jet, through the ignited fuel by which the steam is generated.

To the best of my knowledge, the former of these principles, the steam jet, has never been successfully applied, as a means of increasing the draught of steamboat chimneys, owing, as I suppose, to the protracted intervals that occur between the successive puffs of the steam, and in no considerable measure to the quantity of water often ejected from the steam cylinder, at every puff of waste steam.

The fan blast appears to have been less objectionable, and of far greater utility, in producing the requisite draught in steamboat chimneys, especially in those intended for sea navigation; where the circumstances of the case militate against the employment of high chimneys.

In the navigation of our western rivers, I have witnessed numerous instances in which the fan blast has been resorted to as a means of increasing the draught of steamboat chimneys, but I know of no instance in which this principle has been relied on as indispensable means of increasing the draught, or as a sufficient occasion for reducing the height of chimneys. So far as I have any knowledge of its use, it has been employed as an occasional, and not as a constant help, in adding force to the draught, and is regarded by most of our western navigators of very little benefit, except in promoting the combustion of coal, and diffusing the heat and flame generated thereby more uniformly and extensively through the furnace.

With respect to all cases of river navigation, with steamers of three or four hundred tons burden and upwards, and where wood constitutes the principal fuel for generating steam, I am decidedly of the opinion that the draught produced by means of high chimneys is better adapted to the navigation, and at the present low prices of wood, [$1 25 to $2 50 per cord) is more economical in all respects than the draught produced either by the use of the fan blast or by that of the steam jet.

The delay and danger of lowering chimnies, and the injury to commerce, is thus stated by Col. Long, in reference to every method proposed:

Interrrogatory. What effects would be produced upon navigation of steamboats by requiring them to raise and lower large chimneys on the Ohio in order to pass a bridge; and what dangers and inconvenience would be thereby incurred?

Answer. The raising and lowering of steamboat chimneys, whether large or small, and whether effected by means of hinges or slips (the former being the ordinary hinges applied to switch chimneys, and the latter consisting of two concentric flues of different diameters, the slip flue plying exteriorly of the other, and susceptible of being elevated or depressed at pleasure) must unavoidably be attended by considerable delay, both movements occasioning an aggregate delay of at least half an hour, for every double shift or change, in all cases where the diameter of the chimney exceeds 42 inches, and the tonnage of the boat 300.

This is to be regarded as a mininum detention which has often been protracted to the duration of more than an hour, in the lowering and raising of chimneys belonging to boats of larger size. If we substitute three fourths of an hour, as the average detention of all such boats, in lowering and re-adjusting their chimneys, we shall not be very far from the truth.

Now, the average daily expense of running such a boat, [meaning the average of boats of the larger classes] may be assumed at $200 per day, covering all expenses of the boat, inclusive of deterioration.

"Hence, the average expense incident to every delay incurred in shifting the chimneys, will be $6 25. To this expense may fairly be added as much more on the score of lost time to the passengers and freighters, making the amount of the injury done to commerce by every detention for the purposes above mentioned, equivalent to $13 00.

*That the shifting of the chimneys is a dangerous operation to those engaged in it, there can be no doubt.*"

The foregoing testimony would seem to put at rest the question of requiring steamboats to lower their chimnies, in order to pass the bridge at Wheeling—demonstrating that it is expensive, troublesome to navigators, dangerous to the vessel, its officers, crew and all it transports; and is a regulalation of commerce, inexpedient and ruinous. That it is an unlawful exaction has already been shown, and with the following observations, this point of defence will be dismissed.

"The obligation was upon the bridge company, independent of their charter, to regard existing rights. Besides the express injunction of their charter, not to violate these rights, the free navigation of the Ohio river was a public right of the packet owners, involving space in the air as well as space in the water, both being essential to its use. Both elements are equally free to the navigator, whether required for the hull of his vessel or its chimneys. The same power that may diminish the elevation of the vessel in the air, may limit its draught in the water. The same power may regulate depth of hull that can prescribe the height of chimneys, and the construction of vessels below the water line may as well be made to accommodate the purpose of crossing as their proportions above that line. The claim, therefore, subjects the entire rights of navigators of a public river, for a thousand miles, to the convenience and caprice of those who wish to cross from one bank to the other.

Free navigation implies the free and unrestricted use of either element, so far as required for the passage of every water craft. To compel the navigator to change, or accommodate its construction to any arbitrary rule, or artificial purpose. is to destroy the freedom of navigation, and if it be allowed at one place to change or limit the construction of boats, above the water surface, it may, with equal propriety, be claimed elsewhere.. If the space for headway may be limited to fifty feet, for the convenience of a bridge at Wheeling, why not to thirty feet at Cincinnati? If the heighth of chimneys may be limited. why not the length of hull, breadth of beam, number of boilers, or power of engine? If a suspension bridge at Wheeling may compel boats to lower their chimneys, a pier bridge at Steubenville or Cincinnati, may find it convenient to limit the width of boats—to take off their side wheels, and substitute stern propellers. Without pursuing the illustration further, it is apparent that such a claim is wholly inconsistent with the rights of navigation."—*Report of the Hon Geo Darsie in Senate of Pennsylvania.*

All other grounds of justification failing, the defendants have resorted to special legislation pending this suit. On the 2d of February, an act was procured from the Virginia Legislature, explanatory of the 14th section of the charter, and declaring the bridge to be of lawful height. But this act does not, and could not, repeal the act of 1789, declaring the Ohio river a common highway, and its use free to the citizens of the United States. —(Va. Rev. Code, 1819).

Nor does it purport to repeal the provision of the charter requiring the bridge to be erected so as not to obstruct navigation on the highest floods. These provisions still stand on the Statute Book of Virginia, with as much force as before the Special act. It is a rule of construction that acts are to be so construed, as, if possible, to stand together. Now, the act of 2d of February purports to be merely explanatory. It declares the meaning of the former provision, and that the bridge is of "lawful height." And so it was to the extent that Virginia could make it. But the contingency on which it might become otherwise, still remains in the Statute Book. The utmost effect, therefore, of this Special act, is to save the defendants from a criminal prosecution under the laws of Virginia.

But if this were not so, still the Virginia act of February 2d is but a *legislative construction* of its former act. A learned Judge of this court had in August decided that the bridge was not in accordance with its charter, and was a public nuisance. Pending the consideration of the same question in this Court, the defendants seek a different construction from the Legislature of their State. Now, it is a principle too well established to need authorities, that the legislative and judicial functions are distinct, and neither can trench on the other. Nay, the second article of the Virginia Constitution expressly provides that neither department shall exercise the duties allotted to the other. And it is not a little strange that the Virginia Assembly should seek to give a judicial construction to a law when one of her most learned and distinguished Judges charged with that duty holds a seat upon this bench..

Finally, as the State of Virginia, for the reasons already urged, could not in the first instance authorize this obstruction; for the same reasons she cannot give it any valid sanction.

Without pursuing this branch of the subject further, it is evident that a more serious obstruction to the navigation of the Ohio by steam vessels as well as ships, could not have been devised by the art of man. And upon the authorities already adduced, it is manifest that the charter under which the defendant claim, if it authorized such erection, being state enactment, which, in its operation, prescribes regulations for commerce conflicting with those of Congress, such charter is against the Constitution of the United States, and absolutely void. And all considerations as to the practicability of changing and adapting the structure and machinery of steam boats, so as to pass the bridge, are wholly unavailing to the defendants, for Congress having regulated these vessels, appointed an inspector, prescribed their machinery and the duties of officers and crew, and granted them a license to navigate the river, no individual nor State has any authority to require the change of such machinery, nor impose the performance of any duty, nor for a single moment direct or arrest their course; and hence it follows that as this is undertaken and accomplished by the Wheeling Bridge, it is an *unlawful* obstruction of navigation on the Ohio river.

The injury resulting to the State of Pennsylvania from this unlawful obstruction is of the utmost magnitude. Occupying a central position, resting eastward on the Atlantic, north on the Lakes, flanking on the Ohio by it, she is connected with the Gulf and the

vast regions of the west and south. She thus enjoys a position for foreign and domestic commerce, more favorable than any other in the Union. From the earliest period these advantages were cultivated, she became a navigating State; the energies and enterprise of her people were devoted to navigation and commerce. By her own canals connecting the Lakes and the Atlantic with the Ohio, she possesses channels for water transportation, more important than can be possessed by any State on the continent. By steamboats navigating the Ohio she has intercourse with all the States lying west and south of her, and by the same highway commerce with foreign nations, passing through the Gulf and the Mississippi, reaches her gates, to be transported eastward through the channels she has opened. Across this thoroughfare, within fifty miles of her border, the Wheeling Bridge interposes its barrier. By it, her communication with New Orleans, St. Louis, Cincinnati, and all the region west and south of her, is intercepted, and the commerce flowing between them and her public works is interrupted, exposed to danger, delay, and is at times wholly cut off. The admission by defendants, that obstruction of the Ohio river, from any cause, would injuriously affect her public works, is evidently true; and equally plain is it that such obstruction must injuriously affect every interest that a State can possess, or that she is bound to cherish and defend. This injury may be considered in respect

1st. To the persons and property of her citizens.

2d. To her sovereignty and eminent domain.

3d. To her ports.

4th. To the revenue of her public works.

We have seen to what danger the persons and property of citizens are exposed in passing this bridge. "Whoever uses a citizen ill, indirectly offends the State, which is bound to protect that citizen."—*Vattel, book 1, chap. 6, see 71.*

The encouragement of navigators, the safety and protection of their persons and vessels, has been deemed a high obligation of all civilized States. Consider the position in which the navigators of the Pittsburg packets, and all others of the first class of boats carrying commerce to and from Pittsburg, are placed by this bridge.

Bound by act of Congress, under heavy penalties, to have inspection made of hull, engine, and machinery, and provided with a specified crew, and with a license of Congress, a vessel costing from thirty to forty thousand dollars leaves the port of Pittsburg in the morning, on a rising flood. Descending the river at the rate of twenty miles an hour, with two hundred passengers and a valuable cargo, she has been accustomed to arrive and depart from Wheeling without trouble, danger, expense or delay. But now, before she reaches that port, her headway must be stopped, her fires quenched, and the steam discharged through safety valve, under the severe penalty of the act of Congress. Reaching the bridge, her officers and crew are, at the hazard of life, stationed on the hurricane deck, to lower chimnies weighing from three to six tons; in the meanwhile, the pilot, standing within reach, exposed to imminent danger, is to guide the vessel, with opposing winds and currents, the safety-valve up and the chimnies coming down, through a space one hundred feet wide by fifty in height, between rocks on the shore, and an inclined plane, threatening shipwreck, on the other side.

"I have been steamboating for the last six years as pilot and captain on the Ohio river. * * * * * * * * Thd highest point in the Wheeling Bridge is not over the channel of the river. * * I think it would be impossible for any of the Pittsburg packets to run under the highest point of the bridge at any stage of water with a head of steam on; in running the boat up stream and near the shore, there is a swell that forces the head of the boat off from the shore, so that no pilot can hold her on her course in such manner as to run under the highest point of the bridge. * * Should we in going down fail to hit the highest part of the bridge over the channel, as we are very apt to do in a dark stormy night, and should our starboard engine refuse to back, the other engine would be liable to swing the stern of the boat round to the island side, we should then lie across the river at the mercy of the current. In this event, the bridge being so much lower towards the island, it would be possible, and very probable, that we should be swept under it—the bridge tearing off the cabin and endangering the lives of all on board; we should be liable to be swept around by the wind, even though the engines in backing should work together. It is impossible to back a boat directly up the river with a cross wind blowing."—*Captain Prescot H. Duval, Record page, 215.*

To add to these difficulties, the law comes in with penalties against captain, engineer, pilot, owners, and crew, providing by express enactment,

*Sect.* 12. That every captain, engineer, pilot, or other person on board of any steamboat, by whose misconduct, negligence or inattention to his or their duty, the life of any person is destroyed on board said vessel, shall be deemed guilty of manslaughter, and on conviction sentenced not more than ten years

*Sect* 13. That in all suits and actions for any injury to persons or property from bursting of boiler, collapse of flue, or *other injurious escape of steam*, the fact of such bursting, collapse, or escape of steam, shall be taken as full *prima facia* evidence, sufficient to charge the defendants, until they shall show that no negligence was committed.

The passage of the Telegraph, with lowered chimnies, on a calm day, and of the Hibernia, after the distance had been measured and supposed to be sufficient, is thus described by an eye witness:

"I saw the Telegraph No. 1 performing the operation on the 11th of November inst.; she rounded to above the bridge, and dropped down, stern formost, over the rocks along the shore, which are placed there as a support to the abutment of the bridge, which I would not have done on a falling river for any consideration, on account of the danger to the boat and cargo of being caught on the rocks, and the boat having her bottom pierced by the rocks; this was between 4 and 5 o'clock, p. m., and the weather favorable; no wind, or none of any account; the water was 25 feet 7 inches.

"The rounding to, lowering her chimneys, and passing under the bridge, occupied about half an hour; if the water had been 3 feet higher, she (the Telegraph No. I) could not, I think, have gotten her chimneys low enough to

pass under the bridge, without cutting away her pilot-house, on account of the cross-piece between her chimneys"—*Captain Klinefelter* 174. 13*th Answer.*

The passage of the Hibernia after 36 hours detention below the Wheeling Bridge, occurred the following Monday.

"The freight and passengers of the Hibernia, were shipped on to the James Nelson for Pittsburg, and the boat lay at the Wheeling wharf from the time of her arrival until 8 o'clock on Monday night; her place in the line of Pittsburg and Cincinnati packets required her to leave Pittsburg at 10 o'clock on Tuesday morning; this made it necessary for her to leave Wheeling on Monday night; they had been putting coal on her all day Monday, to deepen her draught and bring her chimneys below the bridge; they put on an unusual quantity of coal—some 750 bushels; this still did not sink her low enough in the water; they then scuttled her—that is, bored a hole in her side and let the water into her, until they thought they had sunk her low enough to let her chimneys go under the bridge; as she passed under, one of her chimneys struck what I took to be a projecting iron bolt; I had measured and thought she had some two or three inches to spare; in going clear of the wood work of the bridge the chimneys passed in under the wood work of the bridge and caught on something which from the grating, I took to be an iron bolt. When the chimney caught, the *pilot let go the wheel to get out of the way of the chimney* as much as he could, in case it should fall The chimney passed the bolt and I called to the pilot to go ahead; he returned to the wheel and the boat went through. If the boat had receded when the pilot left the wheel, and had caught the bolt a second time, I think there would have been extreme danger of the chimney coming down. If the boat had flanked off (that is varied) to either side 10 or 15 feet, as she was liable to do, when the pilot left the wheel, the probability is that she would have lost both her chimneys. The danger was such as to justify the pilot in leaving the wheel as he did. I should have done so myself. I would not have steered the boat through, although I had measured and thought there was room to go clear."—*Captain Reno, page* 226.

To suffer her vessels and seamen to be exposed to such perils, a State would be grossly recreant in duty.

As the sovereign within her territories, Pennsylvania possesses the eminent domain of all property within her limits, and whatever impairs its value works an injury to this attribute of her sovereignty —*Vattel* 112.

Incident to this, is the right of free and unobstructed highways for approach to and departure from her territory, and of the channels of commerce and trade, upon which the public welfare and general wealth and revenues of the State depend. Nothing ought to be neglected to render them safe and commodious.—*Vattel, chap.* 9, *sec.* 101.

"A prosperous commerce is now perceived and acknowledged by all enlightened statesmen to be the most useful as well as the most productive source of national wealth, and has accordingly become the primary object of their political cares. * * * It has been found in various countries that in proportion as commerce has flourished, land has risen in value."—*Federalist, No.* 12, *page* 43.

The security of these attributes of sovereignty was one of the chief arguments for the union of the States.

To Pennsylvania they were peculiarly addressed as a navigating State. "Pennsylvania would have strong inducements to join the northern league. An active commerce on the basis of her *own navigation* is her true policy, and coincides with the opinions and dispositions of her own citizens. The more southern States, from various circumstances, may not think themselves much interested in the encouragement of navigation."—*Federalist, No.* 13, *page* 48.

Thus the conflicting interests that have led to this present controversy were foreseen before the formation of the Constitution. Virginia is not a navigating State; a small portion, only, of her territory has any interest in the Ohio. She therefore authorizes its obstruction for the sake of a bridge. The wealth and pride of Pennsylvania is in the unequalled enterprise and spirit of her merchants and navigators, which is in itself an inexhaustible mine of national wealth. To Pennsylvania the Ohio river is of vital consequence, and her welfare depends upon keeping it free. The secure navigation of the Mississippi, now intercepted by this bridge, was distinctly held forth as a motive to union. (*Federalist, No.* 11, *page* 40.) And of this navigation, the carrying trade in which the packets are engaged is declared to be the support and the foundation of naval strength. (*Ib. page* 38.) In connection with this subject, a market and demand for her naval stores and materials for naval architecture, her wood and iron, are also alluded to as motives for union. (*Ib. page* 41.) The strong guaranty for the protection of these State rights, was the constitutional provision, vesting in Congress the right to regulate commerce.—*Ib. No.* 42.

*Number of steamboats built and licensed at Pittsburg, according to the act of Congress within the last three years.*

| Date. | Number. | Tonnage. |
|---|---|---|
| 1846 - - - - | 53 | 8,394 |
| 1847 - - - - | 55 | 9,353 |
| 1848 - - - - | 53 | 9,047 |
| 1849 to 1st August - | 26 | 4,232 |
| | 181 | 31602, |

HENRY WOODS,
*Surveyor of port of Pittsburg*

The effect of the Wheeling Bridge upon steamboat building is thus stated:

What effect would such a bridge (the Wheeling Bridge, have upon the business of building, upon the Ohio river or its tributaries above it, large steamboats, or sea-going vessels, for use in the southern or ocean navigation?

Answer. No doubt the person who wished to build would take the obstruction of a bridge in consideration and if, in his mind, it was an obstruction, even a part of the year, that person would give mechanics below the bridge the preference."—*Captain Ross, page* 75 *answer* 27.

"I presume that boats can as well be built at Pittsburg now as ever for the lower trade, but the fact of having to take down the chimneys and attaching length to them and putting them up again, would make $500 difference with me in building a large boat."—*Ibid page* 75, *answer* 27.

I should think it, the Wheeling bridge would undoubtedly deter many people from building large size steamboats or sea-going vessels above the bridge."—*Captain Pearce page* 92, *answer* 10.

HON. WILLIAM WILKINS, page 265.

"At and near Pittsburgh, many of the materials for ship building may be had in abundance, that is, wood, iron, and cordage, and all the facilities arising from community of useful and ingenious mechanics. The M

nongahela and Alleghany rivers, and their tributary streams, afford the means of procuring at Pittsburgh an abundance of timber suitable for masts and other parts of such vessels of which I have spoken.

To interrogatory 5th. Sea going vessels could only pass down the Ohio river on high floods. The erection of a bridge at Wheeling, which would cause an obstruction to their passage, would have the effect of obliging the builders of those vessels either to "mast" their vessels below the point of obstruction, or to prepare them above, and do the residue of the work and labor somewhere below the point of obstruction.'

NEVILLE B. CRAIG ESQ., Record page 270.

"Iron, white oak timber for building the hulls of vessels, and lofty white pine trees for masts, can readily be obtained here; and the great abundance of bituminous coal, and its cheapness for driving steam machinery, gives Pittsburgh great advantages for working in iron, and other materials for ship building. Hemp is easily procurable here, and we have an extensive establishment here for making cordage of all kinds for rigging vessels.

The Ohio and Mississippi rivers form the accustomed channel to the sea, and there is no other outlet for sea going vessels.

Sea going vessels could only descend the Ohio river in time of high water; and at such a time they could not pass under the bridge at Wheeling with their masts standing; of course the erection of that bridge will either stop the building of such vessels here, or else compel ship builders or ship owners to postpone the stepping of the masts until they shall have passed the bridge."

The extent of the business of building ships and sea-going vessels, and the interest of Pennsylvania therein, may be judged of, from the following testimony.—

ANTHONY BEELEN ESQ.

During the years 1803-'4-'5 and '6, I superintended the building of sea vessels at my ship yard in this city, situated on the Monongahela, at the mouth of Luke's run; in 1803, the company who employed me built the schooner Amity," of 90 tons burthen, and the ship "Pittsburgh," of 200 ton, both fully rigged for sea; I cleared out the Amity" with a cargo of flour for the island of St. Thomas, and the "Pittsburgh" for Philadelphia, also ladened with flour. In 1804, I built the brig "Nanino," of 250 tons, and cleared her out, fully rigged with a cargo of flour for Philadelphia; 1805, built the ship "Louisiana of 300 tons, cleared her out also fully and completely rigged for the port of Philadelphia, with a cargo consisting of staves and heading, hoop poles, locust trunnels, and stone coal; in 1806, built the ship, "Western Trader," of 400 tons, and cleared her out also fully and completely rigged for Philadelphia. Other sea vessels were about that time built here and in the neighborhood."—*John Walker*, 238, *George Cochran*, 236, *on the same subject.*

CAPT. JABEZ WOODWARD. Record page 238:

Interrogatory. "Are you now having constructed any sea-going vessels; and if so, where; and what is the character of those vessels?

Answer. I am now constructing two sea going vessels at Shousetown, on the Ohio river, 15 miles below the city of Pittsburg; these vessels are steamers; their machinery is being constructed in the city of Pittsburg; they are double decked vessels, and probably would register about 300 tons each.

Interrogatory 4th. Have you heretofore constructed any sea going vessels at any point on the Ohio river; and if so, when and where, and what was the general character of such vessels?

Answer. About 18 months ago, I built a two masted steamboat at Pittsburg, which was intended for the Orinoko trade in South America. She was built stout and heavy, sufficiently so to cross the ocean safely.

Interrogatory 5th. What in your opinion will be the effect of the recent modification of the English navigation laws on ship building in the United States; will it, in your opinion, be likely to affect the question of shipbuilding at the various points on the Ohio river?

Answer. The effect of this modification will undoubtedly be to increase very much the tonnage of the United States. I think that under this modification the carrying business of the United States will be one-third more than it would have been if the modification had not taken place, which will require a corresponding increase in the business of ship building in the United States. I think it will be calculated to affect the question of ship building at various points on the Ohio river, and have a tendency to create a business in ship building on the Ohio river, because materials can be had more cheaply here than at the Atlantic sea board.

Interrogatory 6th. Can timber, suitable for the construction of sea going vessel, and the labor to be employed in their construction, be obtained more cheaply on the Ohio river than in the Atlantic cities?

Answer. Yes."

* * * *

"All other things being equal, I should prefer to build at a point where I could rig out my vessel: as regards the disadvantages to the city of Pittsburg, if sea going vessels should be built here to a considerable extent, and rigged elsewhere, that class of men who are employed as riggers, sail makers, rope makers, and probably block makers, would be likely to reside where the vessels are rigged.

CHARLES THOMS, 244.

"What is your employment, and in what business, and where are you now engaged?

Answer. I am a naval architect, and have been engaged in that business at New York 15 years, and am now engaged at Shousetown, 13 miles below Pittsburgh, in superintending the construction of two steam propellers for the Orinoco Navigation Company; each are to be 440 tons Government measure, 167 feet long, 24½ feet wide, carrying three masts; the longest mast to be 98½ feet above the surface of the water, one 88 feet high, and one 79 feet high.

Interrogatory 2d What is the usual height of masts of sea-going vessels?

Answer. The height varies; small class vessels, of 200 tons, require a mast of 100 feet, large ships 150 feet high. The mast of a vessel like the Alleghany, constructed at Pittsburgh a few years ago, would be about 139 or 140 feet high.

Interrogatory 3d. What are the advantages of constructing such vessels at Pittsburgh and other points on the western waters?

Answer. They can be constructed at Pittsburgh 20 per cent. cheaper than on the sea board; this is the estimated difference in constructing the boats which I am now superintending."

For the construction of IRON STEAMERS Pennsylvania has facilities superior to any other State that have already been put in requisition for the war and revenue service.—This business will also be cut off.

JOSEPH TOMLINSON, Record 244.

"Have you been engaged in the construction of ships or other sea-going vessels? If yea, say first what description of vessels; where, when, and for whom, they were constructed; second, by what means were such vessels to be propelled, and were they to be rigged.

Answer. I have, of iron vessels; three of them were vessels of war, and a fourth one was afterwards converted to the same use. Three of them were built for the Government of the United States, and one for an individual.—They were built within the last seven years here, at the city of Pittsburgh; one of the Government vessels was put together on Lake Erie, the other three were launched here; they were to be propelled by steam; they were all masted and rigged vessels; one was not masted here, she was masted at the Memphis navy yard.

Interrogatory 2d. What facilities, with respect to skill and materials for the business of constructing such vessels, exist at or near Pittsburgh, Pennsylvania, and what materials are chiefly required for that purpose?

Answer. With regard to skill, I think them equal to those at any point in the United States; with regard to materials, I think them superior to any; the machinery for preparing the metal is superior to that at any other point known to me; iron is the material mainly used, and it is of this that I speak; the timber was gotten here for the masts of the Government steamship Alleghany, they were prepared here in my yard, and put up at Memphis, Tennessee; timber far masts, and ropes for rigging them, could be gotten here.

Interrogatory 3d. What stage of water in the river is required for such vessels to clear from the place of their construction to the sea board; and what space is required for the free navigation of the river by such vessels with masts, and full rigged?

Answer. As the Alleghany went out, I should have considered it unsafe for her to have gone on less than 16 feet; she went out unfinished; completely fitted, she would have required 20 feet; her breadth of beam was something near 33 feet; from the surface of the water to the top of her masts the height would be about 90 feet, I

think; I am not positive as to the exact height; I did not furnish them.

Interrogatory 4th. What effect would a bridge at Wheeling 93 feet above low water mark, have on the navigation of the river by such vessels as those of which you have been speaking?

Answer. The Alleghany, as she went out, could go under the bridge on a 20 foot stage of water; had she been masted she could not have gone under the bridge at all; one of the other vessels, the revenue cutter Walker, I think, could not have gone under the bridge; she was rigged here, fitted out entirely."

A not less important attribute of her sovereignty is the jurisdiction of her ports; (*Vattel* 129;) and to secure this important right she has the express guaranty of the constitution, that no preference shall be given to the ports of one State over those of another. And yet in violation of this express provision, the Wheeling bridge operates to exclude from the ports of Pennsylvania all ships and seagoing vessels, and all steamboats of the first class, suffering only the second and inferior class to arrive and depart therefrom. By its operation, within the first month of its existence, vessels clearing from and bound to her ports, have been arrested on their voyage, subject to detention, to dangerous duties, dismantled of their rigging, compelled to discharge and reship their freights and passengers, and after thirty-six hours' delay, exposed to imminent hazard of destruction.

These events occurring before the bridge had been a week completed, are thus related by witnesses.

"I left the port of Pittsburg, on Saturday the 10th day of November, inst., with the Messenger; the stage of water when I left, was about 17½ feet by the marks. I arrived at the Wheeling Suspension Bridge, about 7 o'clock, just after dark. The stage of water there was about 21 feet. I was not able to pass the bridge. We cut our chimnies off about 7 feet, of them 6½ or 7. * * After we cut them off, we cleared the bridge by about 6 inches, the river was still rising; it was accompanied with a great deal of danger and trouble; it was a very troublesome job, delaying the boat about seven hours."—*Capt. Isaac C. Woodward, p.* 206.

"The Brilliant was detained at Wheeling, yesterday morning, Dec. 18, 1849, by the obstruction to her passage caused by the bridge. The stage of water when we reached Wheeling, was about 24 feet. We were detained there between three and four hours. We were compelled to cut off four feet from each of our chimnies. The water was still rising; we were very near having to cut off an additional portion of our chimnies, from the rapid rise of the river; we had very litile to spare after cutting off four feet; we did not clear the bridge by more than 3 or 4 inches."

* * * *

"On this last trip we lost some 15 to 20 passengers at Wheeling, who left us at Wheeling, that would otherwise have come on to Pittsburg. At this season there are not many passengers travelling; such an interruption occurring with our customary number of passengers, would cost us 50 or 60 passengers. * * * I have learned from passengers that the liability to be stopped by the bridge has been held out as an inducement to passengers, to go by stage from Brownsville to Wheeling, instead of coming on to Pittsburg and going down the river as they had intended to do."

* * * *

"I consider 24 feet a very common stage of water during the season of the year at which packets usually run."—*Capt Redmond J. Grace*

"I have lately been engaged in the Hibernia, No. 2, navigating the Ohio river. I am not now engaged nor interested in any steamboat whatever. * * We left Cincinnati on Friday, the 9th of November, on her last trip up bound to Pittsburg, with about 230 passengers in all, when she left Cincinnati, bound to different ports, but principally to Pittsburg; we had not a great deal of freight on this trip, the principal part of it was for Pittsburg. She reached Wheeling on Sunday, the 11th of November; about noon, there were 25 feet 7 inches of water in the channel at Wheeling. She did not reach Pittsburg at her usual time; she was hindered by the bridge; she could not get under the bridge with her chimneys; it was nothing more than a common freshet; nothing more than common high water. The bridge was from 6 to 7 feet too low for her to pass on that stage of water. We laid the boat up at Wheeling, and shipped her freight and passengers on board the James Nelson, for Pittsburg; the Nelson is a small boat. We can't say what the damage is yet; we paid to the James Nelson for one item, $140 00, for passengers. Her next down trip was injured by not being at Pittsburg in time. She did not reach Pittsburg until 7 o'clock oh Tuesday morning; her regular time for reaching Pittsburg is, from Sunday noon to Monday morning. Judging from ordinary occasions, she was injured in her downward trip $400. One of our chimneys which was injured in passing the bridge was taken down and they are working at it now. If it cannot be put up again the cost of a new one will be $300 I think it can be put up again."—*Capt. Klinefelter.*

"The second obstruction to the passage of the Hibernia, occurred day before yesterday, 18th December. We left Pittsburg about eleven o'clock. * * * We reached Wheeling about 5 o'clock, the water, by the marks on the Wheeling wharf, was 27½ feet; we lacked about 6 feet of getting under the bridge; we found the river falling so slowly that we should not be able to get under the bridge in less than 30 or 36 hours, which would throw us off of our regular day, and cause us to lose a trip, as we should not be able to leave Cincinnati on our regular day; we leave Cincinnati on the same day every week, and if we miss that day we have to lay by for a week; we then thought proper to reship our freight and passengers on another boat, and the Hibernia No. 2 returned to Pittsburg; she will have to lie here until her regular day for going down next week; there will be no regular boat to take the place of the Hibernia in coming up from Cincinnati to-morrow, Friday, the 24th of this month, so that the upward trip is entirely lost to us.

We have lost the receipts of the week, which at an average, at this season of the year, would be about $1600 a week, and it has caused us to lie still under an expense of five or six hundred dollars. Our present losses are nothing in comparison to those which will follow from the loss of confidence in our boat; our friends will not go with us, from the apprehension, on every prospect of high water, that we shall not be able to get under the bridge. We left this on the day before yesterday with but 19 cabin passengers, and I never knew so small a number leave Pittsburg on a packet boat before. The cause of this, I have no doubt, was the apprehension that this boat would not be able to get under the bridge at Wheeling.

Interrogatory 3. State whether or not the stage of water of 27½ feet at Wheeling is more than an ordinary rise or flood, at this season of the year.

Answer. I consider it an ordinary rise, and not what we call a flood at all."—*Capt Batchelor, p.* 177.

The injury is not confined to the ports shut up—Beaver and Pittsburg—nor to the commerce between the States, carried to and from those ports. It extends to the foreign commerce of Pennsylvania and her ports on the lake and Atlantic; to trade, manufactures and business throughout her territory. Western and Atlantic shipping depend upon each other. A chief part of the products exported from Philadelphia comes from the south and west, through the gates at Pittsburg. The foreign imports entered at Philadelphia, pass through the same channel. Arrested in their course within fifty miles of the border, they must seek other channels. Stop the river packets, and the sea vessels may rot in their ports. The foreign shipping of Philadelphia, its arts, business, and manufactures, must suffer to an equal, perhaps greater, extent than Pittsburg. Vessels of every de-

scription, whether wafted by the winds or propelled by the agency of fire, have been constructed and cleared from Pennsylvania ports on the Ohio. They are now excluded by iron cables stretched across their highway. In improvements of steam navigation, she has led the way, boasting of a steam marine unsurpassed in the world. All further improvements are brought to a dead halt, by the regulation of fifty feet by one hundred, which they must pass through. Not only so, but if this bridge stands, the vessels already built must be constrained to go back to what Captain Haldeman calls the old worn-out principle of low chimnies, short keel, and scanty accommodation.

The shipping and tonnage of the port of Pittsburg is set forth in the Record. The table exhibits a large annual increase, and that in 1847 the steamboat tonnage arriving at Pittsburg amounted to 372,465 tons.

The eastern and western ports of Pennsylvania are both situated on rivers, which, after leaving her borders, flow as the boundary of other States. Delaware and New Jersey, with the same right as Ohio and Virginia, may, a few miles below the Pennsylvania line, bridge the Delaware river, and thus impose upon vessels entering and clearing at Philadelphia, conditions similar to those imposed by the Wheeling Bridge, and with no worse result. Sea vessels may be as well excluded from one port as from the other. Steam vessels have no more rights on the Delaware than on the Ohio. Foreign commerce, and commerce between the States, have the same constitutional protection from illegal taxes, imposts and duties.

To the Public works of Pennsylvania the injury occasioned by this obstruction is deep and lasting. The products of the south and west, and of the Pacific coast, are brought in steamboats along the Ohio to the western end of her canals at Pittsburg, thence to be transported through them to Philadelphia, for an eastern and foreign market. Foreign merchandize and eastern manufactures received at Philadelphia, are transported by the same channel to Pittsburg, thence to be carried south and west, to their destination, in steamboats along the Ohio. If these vessels and their commerce are liable to be stopped within a short distance as they approach the canals, and subject to expense, delay, and danger, to reach them, the same consequences to ensue on their voyage departing, the value of these works must be destroyed. This result is confessed by the defendants to be a necessary consequence of obstruction to the Ohio river from any cause.

"They have no doubt that the navigation of the Ohio river is important to the works above referred to, and that the value thereof would be affected injuriously if from any cause the passage of steamboats from the city of Pittsburg downwards, were obstructed or impeded."—*2d supplemental answer, Record page* 42.

That the *passage of steamboats* to and from Pittsburg is obstructed and impeded by the Wheeling bridge, has also been shown by the admissions already quoted.

* * * "Six boats, the owners of which refuse to *remodel their chimnies so as to enable them in case of a freshet to pass under the bridge*, belong to Pittsburg, the rival of Wheeling in commerce and manufactures."—*Supplemental answer, Record page* 44.

"A few of the larger class of boats at such a stage (30 feet) of water, will be compelled to lower their chimnies."—*Mem. to Va. Legislature, Record page* 56.

It has been seen that the *six boats* referred to are the carriers between Pittsburg and Cincinnati, of three-fourths of the trade and travel transported by the Pennsylvania Canal.

The *large class* spoken of, are the carriers from New Orleans and St. Louis. Too large for the canal, these boats can reach Pittsburg and depart only on high water. Too large for the bridge, they can pass Wheeling only on low water. They are thus excluded from Pittsburg by a natural obstruction at Louisville, one portion of the year, and for the remainder by an artificial obstruction at Wheeling. To surmount both obstructions, the same condition is imposed—"compelled to lower their chimnies."

By their own confession, then, the defendants, with their cables stretched over the channel, produce the same result as if rocks were sunk in its bed. Between the Pennsylvania Canal and Louisville, a distance of seven hundred miles, no obstruction has hitherto existed. Between Pittsburg and Cincinnati, with which one half of her commerce is transacted, this artificial obstruction, equal to the Louisville falls, is placed within fifty miles of her borders, interposing between her ports and every other to which her commerce extends. Nay, more—to remove obstructions in the Ohio, Congress, at the solicitation of the Pennsylvania Legislature, has appropriated many millions of dollars, (4 *U. S. Stat.* 32,) and within twelve months before this bridge was commenced, one hundred and thirty thousand two hundred dollars were expended for that purpose between Wheeling and Pittsburg.—*Col. Abert's deposition*, 126.

Thus it appears that while Congress has been expending the public money in improving navigation, the defendants have spent their own in obstructing it, with much more effectual purpose.

From the admissions of the defendants as to the obstruction created by their bridge, and its injury to the property of Pennsylvania, attention may now be turned to the other evidence on the same subject.

COL. STEPHEN H. LONG, record page 137.

"My rank is that of Lieutenant Colonel, and my present employment in the public service is that of Superintendent of *Western river improvements*.

Have you seen the suspension bridge at Wheeling? If yea, state what your opinion is as to its effects upon steamboat navigation.

Answer to 6th interrogatory. I have seen the wire suspension bridge at Wheeling, and have no reason to doubt its efficiency, with respect to the support of any loads likely to be conveyed across it, or of the great and valuable benefits it is capable of yielding to travel and transportation, in the direction of the Cumberland road; *but with respect to its being a serious obstruction to steamboat navigation, and to the passage of masted vessels destined for sea, in time of high water, there can be no doubt.*

The height of the bridge floor, above extreme low water, is said to vary from about 62 to about 92 feet in the entire water width at that stage, when boats drawing more than 18 or 20 inches cannot navigate the river in that neighborhood. The larger classes of boats employed in the navigation of the Upper Ohio, require an additional depth of 8 or 10 feet, at Wheeling, in order to enable them to navigate this part of the river to advantage.

At a stage 44½ feet above extreme low water, said to be highest ever known, the clearance under the bridge floor will be about 48 feet near the margin of water on the Wheeling side, and only about 18 feet on the island side of the channel. The chimneys of the larger class of boats, navigating the Upper Ohio, have an elevation varying from 60 to 80 feet above the surface of the water, the tallest chimnies even exceeding the height last mentioned, and require a clearance of equal height between the bridge floor and the water surface, in order to pass under the bridge without obstruction; instead of which the clearance under the highest part of the floor will be only 48 feet, as just before mentioned, or about 38 fee less than the height required for the free passage of the tallest chimnies.

In a medial freshet, or at a stage 22 feet above extreme low water, the clearance under the bridge midway of its length will be only about 55 feet, less by about ten feet than the height required for the free passage of the chimnies of the daily packets between Pittsburg and Cincinnati beneath the bridge floor, midway of the Wheeling channel.

Hence, I am of the opinion that THE SUSPENSION BRIDGE, AS NOW CONSTRUCTED, IS TO BE REGARDED AS A SERIOUS OBSTRUCTION TO THE NAVIGATION OF THE OHIO RIVER; AND IF ALLOWED TO REMAIN, THAT THE FACILITIES OF NAVIGATING THAT PORTION OF THE OHIO SITUATED ABOVE THE BRIDGE WILL BE GREATLY IMPAIRED."

To the same effect is the testimony of three *civil engineers*. John A. Roebling, record page, 129, Solomon W. Roberts, record page 132, Samuel Wickersham, record page 143.

HON. LEVI G. CLOVER, Collector of Tolls:

"Are you the collector of revenue of th State of Pennsylvania, upon her public works terminating on the Ohio river, at Pittsburg?

I am.

What works are those owned by the State of Pennsylvania? State their eastern and western termini.

A line of canal and railroad, extending from Pittsburg to Philadelphia. The eastern termini are two—one at Philadelphia and the other at Baltimore, by means of the Baltimore, York, and Writesville railroad, and the tide-water canal, both of which improvements tap the Pennsylvania improvements at Columbia, Pennsylvania. The western terminus is at Pittsburg. The length of these improvements from Pittsburg to Philadelphia is 393 miles.

What is the source of revenue to the State from those works?

Tolls from freight and passengers passing over the works.

By what route or channel does the merchandize and passengers transported on those works arrive and depart therefrom at the western terminus, and in what description of vessels?

About seven-eighths of it arrive and depart by the Ohio river, both of freight and passengers, and in steamboats.

What effect upon the value and revenue of those works will be produced by an obstruction at Wheeling to the navigation of the Ohio river by steamboats of the largest class?

To interrogatory 5th. The effect will be ruinous. The canal commissioners have taken pains to graduate the tolls on the Pennsylvania public works in such manner as to bring them a shade below those on other works. The obstruction of the Ohio river to the passage of the larger class of boats would raise the price of carriage on the river by throwing it into the small boats, whose charges are higher than tne larger ones. This would drive off freight and passengers to other routes. The price of freights, when the large class of boats are running is from 10 to 20 cents irom Pittsburg to Cincinnati, according to the kind of goods, and from Pittsburg to St. Louis from 20 to 40 cents. When the small boats only can run, the price of freight from Pittsburg to Cincinnati from 50 cents to $1 25 per hundred, according to the kind of goods, and from Pittsburg to St. Louis from $1 to $1 50 per huudred, The higher price of carriage on the Ohio river would drive goods, going either east or west, to other routes—that is, by the New York canal Lake Erie, and the Ohio railroad and canal, and round the coast by New Orleans. Passengers going east or west will go by the New York railroad, Lake Erie, and the Ohio railroad; and going east they will go by the Cumberland road, and by the Baltimore and Ohio railroad when completed. The canal commissioners have reduced the price of tolls on Pork, flour, lead, and many other articles, to 50 cents on the 1,000 pounds; and any change of prices on the Ohio river would divert these articles to other routes, by Orleans and the lakes.

What are the annual tolls received by the State of Pennsylvania from freight and passengers transported on the public works of Pennsylvania, to and from Pittsburg. State each separately.

The annual amount of tolls received on freight would be a million of dollars. It is sometimes more, and sometimes less; but the average would be about a million per annum. This year the amount received up to the 1st of November was $1.335,446 62—one million of which is from the main line to Philadelphia. The number of passengers for this year I cannot give. Last year it was a shade over 8,000, for each of whom the State receives $4 50, amounting to $36,400.

*Cross Examined—*

State whether the difference in the rates of freight and passage on steamboats on the Ohio river is owing to the size of the boat, or in consequence of fewer boats running when the water is at a low stage, and consequently less competition.

The expenses on a small boat for fuel and hands are nearly equal to those for large boats, and their capacity for carrying freight and accommodation for passengere fall far below the larger boats, and consequently their charges are higher. Passengers will not travel on the smaller boats, unless driven to do so by necessity. When the large boats cannot run, the small ones combine together and charge what they please; I have seen their charges so high that men have hired flat boat here and and taken their goods down the river.

How would an obstruction which only prevents steamboats of the larger class from running when the river is at a very high stage, but a very few of them even then, effect the trade and the amount of tolls received on the Pennsylvania lines?

The larger class of steamboats bring to Pittsburg the largest portion of the produce of the west, which reaches the eastern market through the Pennsylvania public works; and the largest portion of the freight brought to Pittsburg by the public works from the east is taken down the Ohio river by the larger class of boats. The other routes have agents here that apprize them of any break in the Pennsylvania canal, by telegraph, and thus divert trade from our improvements. The like advantage would be taken of a stoppage of the larger of boats by an obstruction in the river.

Would a bridge, which is only an obstruction to a small proportion of the larger class of steamboats, and only when the river has risen to an extraordinary height, seriously affect the trade on the Pennsylvania lines of transportation; and would the injury sustained be nearly equal to that sustained every year by the low water in the Ohio?

The merchants depend on the larger class of boats, and the high state of water in the river, for the transportation of their goods, on account of the low freights; and obstruction of the passage, at that stage of the water, is for that reason the most injurious that could occur to the public works. At this season, in the fall of the year, a detention of 2 hours on the river may prevent the receipt of goods to be carried on the canal, aud may cause their stoppage on the way by ice on the canal. *The injury is felt more in the loss of confidence in the route than in the quantity of goods actually stopped.*"

## *Report of the Board of Canal Commisssoners.*

"The board fully concur in the views expressed by the collector, (L. G. Clover, Esq.,) as to the injurious effects which the construction of the bridge at Wheeling must necessarily produce upon the revenues of the Common-

wealth derived from the main line of her public works. If the representation be true that the bridge referred to prevents the passage of the large class of steamboats, which can only run in times of high water, then the State ought to take every legal step to procure the removal of the obstruction It is unneccessary for the board to present to the Senate any argument to prove that such an impediment to the free navigation of the Ohio will materially affect the interests of Pennsylvania"—*Record page* 421.

*Report of the State Treasurer.*

"It becomes my duty to call your attention to the bridge lately constructed across the river Ohio at Wheeling; threatening as it does to interfere with the business and enterprise of Pittsburgh, whose commercial prosperity is so essential to the productiveness of our main line of canal. Should the price of freights to and from Pittsburgh, by the river, be enhanced in the smallest degree by destroying the competion between the large and small boats, *it will result injuriously to the business of the canal*, and prejudicial to the enterprise of a city whose manufacturing wealth and commerce are too valuable to the State to be jeopardized."—*State Treasurer's Annual Report, page* 12.

ANNUAL RECEIPTS OF MAIN LINE—$1,238,720,05."—*Ibid page* 50.

The views thus expressed by the public officers of Pennsylvania and of the general Government, are sustained by the knowledge and experience of business men.

HON. WILLIAM WILKINS, Record page 268.

"The Pennsylvania canal, terminating at Pittsburgh, has been constructed by the State of Pennsylvania, and is now owned by the State.

An obstruction to the navigation of the Ohio river at Wheeling would have the effect of being injurious to the trade and travel on the public works of Pennsylvania, and as a consequence would diminish the revenue arising from those public works.

The injury would be more particularly felt at the ports of Pennsylvania.

The obstruction of the Ohio river at Wheeling would have the effect of diverting a portion of the commerce and travel to the northern and lake route, and to the southern route, by the Baltimore and Ohio railroad, and by the Cumberland road."

EVILLE B. CRAIG ESQ., record page 270.

The State of Pennsylvania has constructed a combined line of canal and railroad from Pittsburg and Alleghany cities; at the head of the Ohio river, to the city of Philadelphia, on the Delaware river; the total length of these improvements about 400 miles, and the cost about 16 millions of dollars. These works are still owned by the State of Pennsylvania.

The effect of an obstruction of the navigation of the Ohio river at Wheeling must be highly injurious to the trade and commerce of the public works of this State, and, of course, to the revenue derived from that source.

The injury to the business of the public works must, of course be felt at the ports of Philadelphia and Pittsburg, in a decline of commercial transactions; and Pittsburg must labor under a serious additional loss in the discouragement of the busildng of sea-going vessels.

By the obstruction of the navigation of the Ohio river at Wheeling, a large portion of the trade or travel carried upon our public improvements aforesaid must be directed to the New York canals and railroads, and by the Ohio to the Mississippi and Ohio rivers, and up those rivers, and also to the Baltimore and Ohio railroads, after that road shall have been completed to Wheeling or a point below that.

N. GEORGE DARSIE, record page 271.

What public stations have you occupied, and what do you now hold, in the Commonwealth of Pennsylvania. and how long?

Answer. I have been for 3 years a member of the House of Representatives, and 8 years in the Senate of Pennsylvania, and am now Speaker of the latter body.

Interrogatory 2d. Are you acquainted with the public works constructed by the State of Pennsylvania, terminating at the Ohio river? If so, state their termini, their cost; their annual revenue, and the sources of such revenue.

Answer. I have become tolerably familiar with them; believe about as much so as anybody else; what is called the main line of Pennsylvania improvements extends from the city of Philadelphia to the city of Pittsburgh; its first cost, original cost, was about fourteen millions of dollars, exclusive of the expenses of motive power on the railroads; the nett revenue arising from the main line, deducting repairs and supervision, was six hundred and twenty thousand seven hundred and fifty dollars and sixteen cents for the year 1847; the next year was only two hundred and ninety-four thousand four hundred and forty-one dollars and seventy cents; the reduction in this year, 1848, was caused by heavy repairs made on breaches; this information I obtained from the annual reports made by the canal commissioners to the commonwealth; the sources are tolls collected on freights and passengers pasing between Pittsburg and Philadelphia, a great portion of which must necessarily pass over the Ohio river, and to and from points west of the Wheeling bridge.

Interrogatory 3d. By what channel are such freight and passengers accustomed to pass and repass to and from the public works of Pennsylvania?

Answer A large portion passes over the Ohio; the main object of the construction of the main line was to secure the trade of that river.

Interrogatory 4th. What would be the effect, on the revenue of those works, of an obstruction at Wheeling to the free and unobstructed navigation of the river by steamboats of the largest class?

Answer. As Pennsylvania is contending with her northern and southern sisters for a fair portion of the trade of that river, every obstruction to the navigation of the river leading to the terminus of her public works, must prove injurious to her revenue.

"GENERAL JAMES K. MOREHEAD, record page 277.

Have you seen the bridge at Wheeling since its erection? If yea, state what effect it will have on the navigation of the river by steamboats, such as the Pittsburgh and Cincinnati packets.

Answer. I have crossed on the bridge since its erection; I consider that it will prove to be a great obstruction to the navigation of the river. I think that it would be possible to construct machinery by means of which chimnies, such as those on the Pittsburg and Cincinnati packets, might be lowered; but it would be attended with difficulty, expense, and danger; and at very high freshets the boats, as they construct them now, *could not get under with their pilot houses* if they had no chimnies at all.

What is the best class of boats navigating the western waters, in regard to speed, cheapness, safety, and comfortable accommodation, and what named boats are the chief of that class?

Answer. The best class is the Pittsburgh and Cincinnati packet line. The boats composing that line are the Monongahela, the Hibernia No. 2, the New England No. 2, the Brilliant, Clipper No. 2, the Messenger No. 2, and the Isaac Newton; the Telegraph Nos 1 2, which run from Louisville to this port, are of the same class.

What would be the effect on the revenue of Pennsylvnia, derived from her public works, from an obstruction at Wheeling to the free and uninterrupted navigation of the Ohio river by steamboats of the largest class?

Answer. Such an obstruction that would either delay or suspend the navigrtion, so as to turn off freight or passengers from the river at this point, would diminish the revenue of Pennsylvania derived from her public works. I think that the revenue of the State, as well as the interests of individuals in Pittsburgh were injuriously affected by the stoppage of the Hibernia at Wheeling by the bridge, during the recent freshet, to a certain extent—to a small extent—in consequence of passengers who were going east taking the stage at Wheeling, who would have come here and travelled east by the canal, or other routes. If the river should be rising, and there should be danger of such a rise of water as would cause obstruction at the Wheeling bridge, it would be calculated to drive off passengers at Cincinnati, who would diverge at that point, and seek to reach the sea board by Lake Erie and Buffalo, instead of coming on to Pittsburg, where the Pennsylvania public works would get a portion of them. In general the water would not be high enough to have this effect; the heaviest business is done in the spring and fall, when the river is generally flush.

JOHN HOLMES. *Page* 279

I have been interested in the trade of the Ohio river; I was formerly in steamboats; I have been concerned in some 25 or 30 at different periods; I am not now concerned, as owner or otherwise, in any steamboat. The business of the public works of Pennsylvania is largely interested in the free navigation of the Ohio, and will be injuriously affected by anything that will obstruct that navigation. The main line of public works, from Philadelphia to Pittsburg, is held entirely by the Commonwealth of Pennsylvania?

State any facts within your knowledge, going to show the connexion that the class of steamboats and the rates

of freight on the Ohio river have with the success of the public works of the State of Pennsylvania.

The connection is, that the larger the boats the lower the rate at which they carry freight; the larger the boats the lower the rates at which they can afford to carry freight; the smaller the boats the higher their charges. For example, during the present season the price of freight from Pittsburg to Cincinnati has varied from $1 25 per hundred down to 10 cents, according to the size of the boats and the stage of the water. The increase of charge on the Ohio river had the effect to drive off a great deal of trade from the public works of Pennsylvania during the present year. Anything that would diminish the size of boats on the Ohio river would increase the cost of transportation on that river, and increase the time that it would require to go through. When I was engaged in the business of the Ohio river, and was part owner of the first line of packets that was established on the Ohio river, running daily from Pittsburg to Louisville, (Sundays excepted,) the tonnage of the boats in this line, by custom-house measurement, was from 100 to 130 tons. Those boats were, at that time, of the first class on the river—the finest boats that ran up here in this trade. Since that, the boats have kept increasing in size, until now the Cincinnati packets range from three hundred to four hundred tons, custom-house measurement. The effect has been to reduce the price of freights and passages, and to increase the speed of the boats; wages and fuel have increased in price.

State, as nearly as you can, what you estimate the average annual value of goods, merchandize, manufactures, and freight in all of its varieties, shipped at the port of Pittsburg, and destined to points west of Wheeling; and also the amount received at Pittsburg, coming from points west of Wheeling?

I made an estimate during the summer for the year 1848, and came to the conclusion that I should be under the mark at forty millions of dollars. This estimate was of course a very rough one, but from all the information that I could gather, I feel confident that my estimate was not too high.

*Cross-examined by defendant's counsel.*—Which do you consider the greater tax on trade, the Wheeling bridge or the Canal tolls at Louisville, and the stone bridge over that canal?

The Wheeling bridge, of course. The canal at Louisville is an artificial navigation, made to surmount falls, that during a portion of the year cannot be gotten over in any other way, it being optional with the boats whether they go through the canal or not.

LUKE TAAFFE, Record page 262.

"I have been engaged in the transporting commission and forwarding business near 14 years at Pittsburgh, and am now engaged in the Portable Boat line. I would consider forty millions of dollars a low estimate of the annual value of merchandize and produce transported on the public works of Pennsylvania, terminating at the Ohio river. The produce, merchandise and passengers transported on these canals arrive and depart from Pittsburgh, the west end by the Ohio river in steamboats.

What effect upon the business and revenue of those canals would be produced by any obstruction at Wheeling of the navigation of the Ohio river by steamboats of the large class to and from Pittsburgh and Beaver?

It would injure the business and diminish the State revenue decidedly; *whenever* there is any apprehension of *obstruction* to the navigation trade goes round by New York and other routes that would go through the Pennsylvania canal.

To what channels or ports would trade and commerce be directed by such obstruction at the place where the Wheeling suspension bridge is located?

It would direct trade to channels at and below Wheeling.

What proportion of the freight and passengers transported on the Ohio river is carried by the Pittsburgh and Cincinnati packets?

I should estimate the proportion at about three-fourths.

To what ports are the principal shipments made from Pittsburgh?

Cincinnati is the principal one and St. Louis the next. Considerable shipments are made to intermediate ports."

WILLIAM BINGHAM, ESQ. Record page 264:

"I have been engaged in forwarding, commission, and transporting business; I have been so engaged for the last 15 years.

I suppose that three fourths of all the merchandise arriving at Pittsburg from the east passes down the river Ohio principally in steamboats; there is sometimes a little kneeling, but not much of it; I think about three-fourths of the produce that arrives at Pittsburg from below comes in steamboats chiefly, and goes to the east by the canal.

Any obstruction in the Ohio river river would have a tendency to divert trade to other channels than the canal and public works of Pennsylvania.

Produce would take the railroad and canal at Cincinnati; some of it might stop at Wheeling, and take acoss the country; some of it would find its way through the Portsmouth and Cleaveland canal.

I think that three-fourths of the passengers, taking a boat at Pittsburg; travel on the Pittsburg and Cincinnati packets, and the proportion of passengers coming up the river, shipping at Cincinnati and ports below Wheeling, I take to be same; that is, about ¾ of freight; I would say that one-half of all the goods for ports below Marietta, of goods from the east, for Marietta, Cincinnati and ports between these two points, is carried on these packets, when the water is such as to let them run and carry loads; they carry a considerable portion of the freights shipped at Cincinnati and ports below Marietta, for Pittsburg; I should say, from ½ to ¾.

So far as my line is concerned, the principal shipments are made to Maysville, Portsmouth, snd Cincinnati."

GEORGE BLACK. Record page 264:

"I am now engaged in the transporting and forwarding business, and have been so engaged for the last 10 years at Pittsburg. I have been, during all the time, connected with Leech & Company's Transporting Company of Pittsburg, and am so still.

I estimate the annual value (of shipments on the works of Pennsylvania) at from 40 to 50 millions of dollars. I base the estimate on the business that we do ourselves, and on comparison of that with the tolls received on the whole main line

What effect upon the business and revenue of those canals and public works would be produced by any obstruction at Wheeling of the navigation of the Ohio river by steamboats of the large class to and from Beaver and Pittsburg?

It would diminish the trade and lessen the revenue of the State of Pennsylvania. In what proportion I cannot state; but I would estimate it at a large amount. An obobstruction, at times of high wate is more injuriously felt than at any other season of the year, because it is at periods of high water that business is principally done On the 17th and 19th of this month we forwarded on the main line to Philadelphia a quantity of wool from this place I learned from the consignor *that this wool had been shipped from Cincinnati on small boats from the apprehension that the packets would not be able to pass under the bridge at Wheeling.* The wool was eight days on the way instead of 3, the customary time of the packets. It arrived so late that we had to forward it at a greater cost to the owners than we would have down had it been received 5 days earlier, (it being at the close of the season for business on the canal,) and at the risk of its being frozen up in the canal. Any thing that increases cost on any part of a route, or to cause delay, is calculated to give preference to rival routes, and to injure the route on which the increased cost and delay occurs, and thereby to diminish the revenue accruing from the same. Any obstruction at Wheeling, or liability to obstruction or stoppage at Wheeling, or any where else on the Ohio river between this place and Cincinnati, would be calculated to shake confidence in this route; which would be liable to be taken advantage of by rival routes, to the prejudice of the revenue of the State of Pennsylvania, derived from her public works.

In my opinion at least three fourths of the passenger and dry goods transported to and from Pittsburgh, on the Ohio river, is carried by the Pittsburgh and Cincinnati packets; and about half the produce. The transportation of merchandise is far more profitable than that of produce to the State.

The principal points westward are Cincinnati, Louisville, and St. Louis; eastward, they are Philadelphia and Baltimore.

These results have been occasioned by defendants with knowledge and without necessity.

The knowledge of the effects of their bridge and the rights violated may be inferred from the fact that the commerce of Pennsylvania passed Wheeling along its course, and to respect it the defendants were expressly enjoined by their own charter. It is further shown by the application to the Virginia Legislature to amend their charter and sanction by law

the height of their bridge, and their engineer himself admits it.

Answer. We were aware that there were some boats with chimnies so high that they would be unable to pass under the said bridge, on the highest freshets, without having joints in their chimnies; but I do not recollect whether that information was communicated to the board of managers, previous to the adoption of the plan, or not. Those few boats which would not be able to pass under said bridge in said freshets were not provided with joints in their chimnies for lowering them."—*Israel Dickenson, Engineer, page* 381.

That the Bridge might have been constructed so as not to obstruct navigation, was admitted by the chief engineer when he proposed to the committee of Congress to throw across a single span of the same dimensions, "so as to leave the river entirely unobstructed."—*Ellet's letter to Steenrod, House Rep. 28th Cong. No.* 79.

It is also shown by the report of two skilful engineers to the War Department, (Lieuts. Sanders and Dutton), who proposed a plan for that purpose.—*House Rep. 25th Cong.*

It is also proved by three skilful and distinguished civil engineers—one of whom examined the localities, and submitted a plan to the Bridge Company, the others having examined the bridge since its erection.

"I am acquainted with the locality of the Wheeling bridge, having made the surveys necessary for the planning and execution of such a structure. A bridge might have been constructed at an elevation in the centre of 25 feet more than the elevation of the one erected, or about 120 feet in the clear above low water, by simply continuing the rise of the floor at the rate of five feet in a hundred from the abutments to the centre—a distance of 500 feet. Both abutments would have to be 95 feet high from low water to the base of the towers; the latter would require a further height of about 100 feet; total, 95 feet. *There is ample distance on the island to effect descent.* If there was any absolute necessity for a still higher elevation, more might be obtained by going further back with the approaches, and by increasing their rate of ascent."—*John A. Roebling, page* 180.

SOLOMON W. ROBERTS Esq., Record page 131.

"I am a civil engineer, and have been so engaged for the last twenty-two years.

Have you examined the site of the Wheeling and Belmont bridge, about being erected across the Ohio river?

Answer. That he has, several times.

Could, in your opinion, that bridge be erected at a greater elevation above low water in the Ohio river than 92 or 93 feet; or is there anything in the character of the river banks at that point to prevent such an increase of elevation?

Answer. The bridge could be erected at a greater elevation above low water in the Ohio river than 92 or 93 feet. There is nothing in the character of the river banks at that point to prevent such increase of elevation. It is merely a question of cost.

Will the bridge at the elevation of 92 or 93 feet, in your opinion, be an obstruction to the passage of steamboats in the Ohio river, with such chimnies as are now upon the Pittsburgh and Cincinnati packets?

Answer. It will.

At what height, in your opinion, should a bridge be erected at that point, to be above all interference with the chimnies of steamboats?

Answer. About one hundred and twenty feet above low water.

* * * * * * *

What, in your opinion, would the wire suspension bridge at Wheeling have cost had it been elevated to 120 feet above low water, more than at the elevation of the present bridge?

Answer. I can give but a general answer; my impression is, that it would have increased the cost about one-fourth.

Would it be practicable to increase the elevation of the present bridge to the height of 120 feet above low water, and if so, how could it be done?

Answer. The present superstructure and towers would, in my opinion, have to be taken down, the appoaches raised and strengthened, and the bridge re-erected with such changes of plan as the additional height would require; the old cables, in my opinion, could be spliced.

How much more, in your opinion, would the bridge cost, if taken down and again erected, as you have above suggested, than if it had been originally built in the mode, and at the elevation which you consider necessary?

Answer. I cannot make an accurate estimate, but if the foundations are sufficient, as I suppose them to be, I should thiuk abont thirty thousand dollars."

SAMUEL M. WICKERSHAM, Record page 143.

"I was educated to the business of an Engineer, and followed it several years.

Could, in your opinion, said bridge (the Wheeling Bridge, have been erected, so as to allow a greater headway for the pasiage of steamboats; if yea, in what manner, and at what additional expense?

Answer. Certainly a bridge could have been erected in such manner as to allow a greater headway for steamboats. It is a mere matter of costs. There are several modes in which it could have been done

Could the present bridge now be changed so as to allow a greater headway for the passage of steamboats than it now affords?

Answer. It could."

By way of compensation for obstructing the Public Works of Pennsylvania, defendants point to the advantages of their bridge in crossing to Zane's island, and its connection of the Cumberland road. The bridge affords passage for common travel and heavy teams ten hundred and ten feet. The highway obstructed is the passage for ships, steamboats, and sea-going vessels, bound on their voyages for thousands of miles.

A table is exhibited by the defendants showing the travel across Wheeling Bridge. Record, page 416. It is proved by an experienced ferry-man (Ephriam Jones, page 287,) that three times that amount of travel could be accommodated by a good ferry, at one half the price. Another table exhibits that the average annual arrivals at Pittsburg of steamboats exceeds two thousand five hundred, (*William Sutch, Record, p.* 253,) and the same number of departures may be inferred. Of these the chief portion pass through the channel obstructed by the Wheeling Bridge.

The facilities that may be afforded to the Baltimore and Ohio rail road are also insisted upon by way of off set to the ruin of the Pennsylvania canals. Waiving here any objection to the right of destroying the commerce of one State for the advantage of another, it may be asked, when will the Baltimore Rail Road reach Wheeling?

It is a public and historical fact, that the town of Wheeling has obstructed the path of the Baltimore and Ohio rail road across the mountains for the last ten years. Not until the Company yielded to pay tribute to Wheeling by the heavy condition of extending a branch to that place did it gain permission to pass through Virginia and reach the Ohio river. To compensate for the tribute thus levied upon the commerce of that great channel, the Wheeling Bridge Company propose to levy one still more unjust and burdensome upon the commerce passing through the channels of Pennsylvania. It is also a public fact that the junc-

tion of the Baltimore and Ohio rail road, with one running West, through Ohio is expected to take place forty miles below Wheeling, and the crossing be there effected. The Wheeling Bridge therefore offers no facility to this great work. But were it otherwise it would be neither right nor expedient to obstruct the Steamboat navigation of Pennsylvania for a rail road crossing.

Again. Supposing this bridge could be safely used for the passage of loco motive engines, and that the Baltimore and Ohio rail road could not otherwise nor elsewhere cross the Ohio—What then would be the advantages to commerce?

"The Baltimore and Ohio Rail Road Company estimate the probable traffic on the western end of their road after its completion to the Ohio at about 150,000 passengers and 60,000 tons of freight annually." *Ellets Report, page* 31.

Now the steamboat commerce of Pennsylvania passing to and from Pittsburg obstructed by this bridge, amounts annually to 164,000 passengers, and one hundred and twenty-six thousand tons of freight. See Tables, Record page 203. This is more than the estimate of the Baltimore rail road by fourteen thousand passengers and sixty-six thousand tons of freight.

But this bridge is not designed for the use of the rail road, and can never be used unless the Bridge Company can exercise over it the same power claimed over Pennsylvania commerce, force it to abandon steam and go back to the old worn out principle of horse power.

"I do not wish to be considered as holding out any promise that the Wheeling Bridge as it is intended to be constructed, can be safely used for the passage of locomotive engines. *This work is designed expressly for common travel and the use of heavy teams.*" *Ellets Report, page* 23.

"Yet should it be deemed an object at any future time to lay down a rail way track *and take cars across by horse power*, the bridge will possess abundant strength and rigidity for *that purpose.*" *Ib.*

There is one advantage offered to the Baltimore and Ohio railroad, which is not avowed as the object of this bridge, but may account for its peculiar construction. It appears by the evidence that not only will this obstruction in its actual operation divert trade to routes through Wheeling and below that point, but even the *apprehension* of such obstruction will produce the same result. Moreover, that rival routes east and west of Pittsburg avail themselves of this circumstance by telegraphic communication and otherwise to divert business from the Pennsylvania channels.

As no greater benefit could be conferred on the Baltimore road than to throw an obstacle across the highway leading to the Pennsylvania canals, this bridge by accomplishing that object may well claim to be an essential benefit to the Railway—not as a facility for crossing the river, but as an obstruction to passing along the stream. For the loco motive to cross the river the engineer admits his bridge was not designed, but his engineering skill has fully accomplished the object of stopping the boat.

It must be left to inference how far this may account for the inclined plane instead of a level headway across a channel navigated by over three hundred steamers, and for the western abutment being twenty-eight feet lower than the eastern, although the island one mile wide affords every convenience for embankment.

The material allegations of the Bill—the highway, the obstruction and the injury—being admitted in the answers; and the nature and extent of the injury exhibited by the evidence, it only remains to consider the remedy. It is claimed by the State of Pennsylvania that the proper remedy is a decree of abatement by this Court at her suit. The time already occupied limits the space to be devoted to this last branch of my proposition. And indeed the elaborate discussion of nuisance on navigable waters by two learned judges of this Court, in a great degree curtails my task. *Spooner's case* 1*st McLean's Reports* 359, *and the New Bedford Bridge case*, 1 *Woodbury and Minot's Reports* 401, where all the ancient and modern law on the subject is collected.

These injuries resulting from the obstruction of a navigable river belong to the class termed common nuisance. For this injury two remedies are known to the law—forcible abatement by act of the party, or by suit. The latter remedy only has thus far been resorted to by Pennsylvania. A well established form for this remedy recognized by this and other Courts in the numerous cases cited in the brief is by bill in equity. This was the ancient remedy, says Lord Hale. *Eden on Injunction* 157 *and cases there cited. Drewry on Injunction and cases cited.* 2 *Story's Equity*, 211, *Sec.* 921, 930. *Hargrave's tracts, De jure Maris* 87. *Spooner's case*, 1st *McLean* 359. *New Bedford Bridge case*, 1 *Woodbury and Minot. George Town vs. Alexandria canal*, 12 *Peters*, 91, 401, *and cases cited under this point in the brief.*

So well established is equitable jurisdiction, that I shall consume no time in reading the authorities cited. By the Constitution of the United States, jurisdiction is given to this Court in *all cases* in law and equity wherein there may be a controversy between a State and the citizens of another State. Her right, then, to the relief sought must depend simply upon her right to sue.

Two classes of injury are complained of.

1st. Those operating immediately upon the persons, property and business of the citizens of Pennsylvania.

2d. Those which operate directly upon *the State.*

In the case of *George Town vs. The Alexandria Canal Company*, 12 *Peters* 91, it

was held that such relation did not exist between the city corporation and its citizens as to justify a suit by the corporation. Such right of intervention being an attribute of sovereignty belonging only to the sovereign having jurisdiction and eminent domain of person and property. Over the District of Columbia and its inhabitants that right belongs only to the United States. The Corporation of Georgetown was but an individual created by that sovereign, having no more jurisdiction and bound to no more protection *quoad hoc*, than one individual might exercise over another. Not such is the relation between a state and her citizens. The State has sovereignty and eminent domain over her citizens, and by consequence is bound to protect them.

The injury then although it may act directly upon the person or property of a citizen is an *injury to the State.*

Some of the injuries inflicted by this bridge immediately upon citizens, and through them upon the State, may here again be adverted to. Of these, first in consequence, is the imminent hazard of life to which her navigators are exposed at uncertain periods during nine months of the year in affecting a passage in high water under the bridge. By the same cause the regular packets, the principal carriers between Pittsburg and Cincinnati, seven in number, costing in the aggregate two hundred and forty thousand dollars, are exposed to shipwreck, and many other vessels of the same class to like casualty. Seven hundred thousand dollars of private capital is invested in transportation on the canals, the value and profits whereof is by the obstruction of the packets depreciated. The business of building large steamboats, sea going vessels and ships in which heavy capital is invested, and upon which numerous artisans and mechanics depend for support, is cut off. These are injuries operating directly upon citizens of Pittsburg. Their more remote, but not less important results, extending throughout the state and to every class of citizens and pursuit in life, it is needless to trace.

Moreover they result from obstruction of a highway extending into the territory of the State, and being its western outlet.

The right of the State to sue for redress of such injuries will be considered in reference to its existence.

1. Independent of the Constitution.
2. As affected by the Constitution.

Before the Union, the State of Pennsylvania possessed all the attributes of sovereignty.—*Federalist*, 118. Among these was the right to seek redress for wrongs in Courts of Justice—(*See cases cited in brief*)—and the duty to protect her territory and the rights of her citizens. "If a nation is obliged to preserve herself, it is no less obliged to preserve all its members. The nation owes this to itself, since the loss even of one of its members weakens it and is injurious to its preservation. It owes this also to the members in particular in consequence of the very act of association. (*Vattel Book 2, ch. 5.*) Every nation, as well as every man, has a right to prevent other nations from *obstructing* her preservation, her perfection and happiness—that is, to preserve her from *all* injuries. And this right is a perfect one, since it is given to satisfy a natural and indispensible obligation.—(*Vattel Book 2, chap. 4. sec.* 49.)

This right of intervention being a perfect one is accompanied with the right of using force in order to assert it. Ib., chap. 5, sec. 66, page 160. Its exercise has been a fruitful source of wars growing out of wrongs similar to those now under consideration. It is plain then that the right of intervention to protect and seek redress for her citizens injured in property and endangered in persons by a wrongful act existed before the constitution as an attribute of her sovereignty. It is equally clear from the highest authority recognized by this court in expounding the Constitution, that it continues to exist. "The State governments clearly retain all the rights of sovereignty which they before had, and which were not by that act exclusively delegated to the United States. This exclusive delegation, or rather this alienation of state sovereignty, would only exist in three cases; where the constitution in express terms granted an exclusive authority to the Union; where it granted in one instance an authority, and in another, prohibited the state from exercising the like authority; and where it granted an authority to the Union to which a similar authority in the states would be absolutely and totally contradictory and repugnant." Federalist No. 22, page 119.

Now while a general right to seek redress by suit for injuries to the public at large may exist in the general government, yet it cannot be shown that any exclusive right to seek redress for wrongs specially inflicted upon the citizens of a particular state, has in express terms been granted to the general government. Such exclusive right would imply a consolidated government, of the most absolute nature. Neither is it in express terms prohibited to the states to protect their citizens and seek redress for injuries where they are specially injured. Its implication denies the relation existing between a state and her citizens. Denies the right arising from state sovereignty and eminent domain, and the protection thereby due to the citizen. The state by her own legislative enactments and judicial courts protects her citizens within her borders from injury to person and property. For injuries beyond her borders, protection must be sought in Congressional enactments and by suit to enforce them in the Federal courts.

The Laws of Congress regulating commerce cannot enforce themselves, neither can Courts act without plaint before them. The wrong is usually committed as in this case, under color or State Legislation. Now if the State whose citizens are specially injured may not sue, then it follows that a citizen must enter at his own cost, into unequal contest against State authority, or else that the Executive of the General Government must exercise a close supervision over State enactments, and exercise the invidious duty of making plaint whenever in the vast commerce of the Union the commercial rights of a citizen are injured. Either alternative involves substantially a failure of justice, and leaves commercial rights in this country more unprotected than was ever known under any other form of government.

To deny this power of protection thus existing before the Constitution, and not expressly pro-

hibited, would be placing the State on the footing of a mere municipal corporation to which the citizen owes no duty since from it he can claim no protection.

And how can it be repugnant or contradictory to any authority vested in the General Government, for a State to seek judicial relief against a nuisance specially injurious to her citizens? If it be true that the regulation of commerce being vested in Congress, a State may not by her own mere enactments enforce such regulations, still it does not follow that she may not in behalf of her citizens seek their judicial enforcement before a competent tribunal.

But we are not left to reasoning on this subject. In the forty-fifth number of the Federalist, page 187, the powers reserved to the States are enumerated by *Mr. Madison.*

"THE POWERS RESERVED TO THE SEVERAL STATES WILL EXTEND TO ALL THE OBJECTS WHICH, IN THE ORDINARY COURSE OF AFFAIRS, CONCERN THE LIVES, LIBERTIES AND PROPERTIES OF THE PEOPLE; AND THE INTERNAL ORDER, IMPROVEMENT AND PROSPERITY OF THE STATE. *Federalist, No.* 45, *page* 187.

There may be injuries in which the State exercising its sovereign discretion would leave the citizen to seek his own remedy. In other cases, like the present, the injury may be so great, and irreparable in its character, affecting so many, inflicted under such authority, and redress subject to such local influences, even in Federal Courts, that to leave the burthen and expense upon the citizen would be a flagrant dereliction of duty on the part of a State. Nor is there any reason for the apprehensions expressed by the defendants in their supplemental answer, that "by a system of legal fictions and constructions, the jurisdiction of the Supreme Court of the United States may be extended to embrace almost every variety of cases which may arise between citizens of Pennsylvania and those of other States." For, in the first place, States are not inclined to interfere in the affairs of citizens, unless it is manifest that in the issue some great principle or important right is involved. Sovereign States will in this Court be supposed to act with wisdom and decorum, and not to engage in litigation with States or individuals without strong show of reason and just cause, the validity whereof is after all to be determined by this tribunal. Besides, thus far in our history, States have not been prone to submit their controversies with States or with individuals to the judgment of any Court. They have hitherto preferred redressing their wrongs by acts of retortion, confiscation, nullification and civil war. This too in behalf of rights less important than those of Pennsylvania here at stake.

The right of the State to maintain suit for the second class of injuries would seem to be free from all doubt as the case now stands; for it is admitted on the record that her property is injuriously affected by the obstruction of navigation, and its value diminished.

These admissions have heretofore been referred to, but they may again be mentioned in this connection. They are:—

1. That their Bridge is erected over the steamboat channel of a navigable river and *common highway* leading from the territory of Pennsylvania and used by her citizens.

"About one hundred miles below Pittsburgh' the channel of this river, along which steamboats or the larger portion of them pass and repass, runs between Zane's island and the Virginia shore at the city of Wheeling, as is stated in the Bill. The river, as is therein alleged, is a navigable stream and common highway from its head at Pittsburgh to its mouth, running through the State of Pennsylvania in part. A valuable trade and commerce is conducted along it by means of steamboats, keelboats, scows, and rafts, by citizens of the United States, including of course, as the bill avers, citizens of the State of Pennsylvania."—*Original Answer, Record page* 20.

2d. That the citizens of Pennsylvania have a *right* to the use of this highway, without *obstruction* or unnecessary *impediment.*—

"It is granted that the citizens of Pennsylvania may reasonably claim to enjoy the free navi, gation of the Ohio by steamboats and other craft' without obstruction or unnecessary impediment.'—*Original Answer, page* 27, *part of* 3*d paragraph.*

3d. That the Pennsylvania improvements terminate upon this highway.—

"In reply to plaintiff's amended bill, respondents answering say, that they believe it to be true that the State of Pennsyluania has expended large sums of money in the construction of public improvements terminating at Pittsburg and Beaver.—*Supplemental Answer, page* 43, 3*d paragraph.*

4th. That these works are used for the transportation of freight and passengers, and the State derives large revenue from them.—

"They take it for granted that a large number of passengers do pass over said public works, and that a large amount of toll is derived therefrom, which eventually finds its way into the treasury of the state."—*Supplemental Answer Record, page* 43, *paragraph* 3.

5th. *That the navigation of the river is important to these works, and their value will be impaired if the passage of steamboats is obstructed or impeded.*—

"They have no doubt that the navigation of the Ohio river is important to the works above referred to, and that the value thereof would be affected injuriously, if from any cause the passage of steamboats from the city of Pittsburg downwards were obstructed or impeded.—*Sup. Ans.*, 3*d par.*, 4*th sent.*, *page* 43.

6th. That their bridge *does* obstruct and impede the passage of steamboats, and compels navigators to change the construction of their boats, "remodel their chimnies," and imposes upon them expense and trouble.

"The bridge which defendants are building, will offer no *appreciable* impediment or obstruction to the *average* class of boats accustomed to navigate the river."

* * * * *

"It is true there are boats whose chimnies are

of a somewhat greater and unnecessary height."—*Original Answer Record*, 32.

"All but eight can pass under the Wheeling and Belmont bridge during the highest freshets without inconvenience. Two of those which are owned in Louisville, respondents believe have been arranged by their proprietors so as to pass under without difficulty. The remaining six boats, the owners of which *refuse to remodel* their chimneys so as to enable them, in case of a high freshet, to pass under the bridge, belong to Pittsburg, the rival of Wheeling in commerce and manufactures."—*Supplemental Answer Record, page* 43, 44.

"A few of the larger class of boats at such a stage (thirty feet) of water will be *compelled* to lower their chimnies."—*Memorial of Bridge Company, Record, page* 56.

"At such a stage (25 feet) still fewer boats will be *compelled* to lower their chimneys.—*Ib.*

"A *small additional expense* is required to provide them (joints and hinges) and their use causes but *little trouble*."—*Ib., page* 57.

Resting only upon these admissions, Pennsylvania might claim the decree she asks from this court. But sundry objections are urged by the defendants, to each of which a brief answer may be made.

First. It is objected that the State cannot sue for an obstruction of the Ohio navigation, because she does not own a steamboat.

"The State of Pennsylvania, in her aggregate and sovereign character, does not *own a steamboat* or any other kind of water craft that navigates the Ohio river, and there is no allegation in her bills that she does. She cannot, *therefore*, as a state, be directly interested in any question which may arise in regard to any obstruction which may result from the erection of the bridge of your respondents to any boat which may navigate the waters of the Ohio river."—*Supplemental Answer, bottom of page* 40.

This admits her right to sue, and places the objection only on the species of property injured. On the same principle the owners of property on a street shut up, cannot sue, if they do not themselves own carts or carriages, that might be stopped. But the use of a highway may be of much more value to him whose property it leads to, than the wagon that travels on it. The steamboat stopped by the Wheeling bridge costs $40,000, but the canals injured cost many millions.

Now, the nature of the property injured cannot affect either the wrong or the remedy. In the case of the boat, the use and value of one species of property might be injured; in her canals another species of property is injured. Both belong to the same class and are used for the same ultimate purpose—the transportation of merchandize and passengers. Hence conceding the right of action, if she owned boats, yields the right, if her canals be injured, leaving her remedy to depend simply upon the fact of unlawful obstraction and injury.

The navigator's right to sue, depends not upon an actual injury to his person or his vessel, but the depreciation of its use as a vehicle of commerce. He owns a vessel accommodated to the purpose of commerce, by which he carries freight; the highway is essential to its use. So the State, being merely a body corporate, is not injured in her person, but in the use and enjoyment of property, also a vehicle of commerce, the value whereof equally depends upon the highway being unobstructed. In the case of Conning *v.* Lowere, 6 Johns, Ch. Rep. 439, an injunction was granted against the obstruction of a street, on the application of one whose property bounded upon it, and was injured by the obstruction.

In the case at bar the injury resulting to the state, from obstruction to steamboats by any cause, stands admitted upon the record. The value of her property is therefore diminished by a wrongful act. And it is this that constitutes the ground of relief. Diminution of value by other rival channels of trade might occur, in which case it would be *damnum absque injuria*. But here the loss is occasioned by the defendant's mere wrong.

Beside the property in her canals, the State has a direct interest in her ports, the commerce and vessels belonging to them, expressly recognized by the Constitution, which provides, in the fifth section of the ninth article, that "no tax or duty shall be laid on articles exported from any state." "No preference shall be given by any regulation of commerce or revenue to the ports of any one state over those of another; nor shall vessels bound to or from one State be obliged to enter clear or pay duties in another." "No state shall, without the consent of Congress, lay any duty on tonnage."—Art. 1, Sec. 9.

Occlusion of her ports, barricade of the highways to and from her territory, has always been regarded as the most insulting as well as most substantial injury that can be suffered by a state. It is the severe measure of war. And yet, by this bridge, every port in Pennsylvania is sealed. Foreign commerce arriving at Philadelphia may be transmitted from thence to Pittsburg, but can go no further. Eastern manufactures entering at Erie, may reach Beaver, but must there halt, on their way to the South and West. Strategic art could not have invented, nor the hostility of war put in force, a measure more annoying and deeply injurious to the state of Pennsylvania, than is the blockade confessedly established just over her borders, by the Wheeling bridge.

This blockade, the defendants confess, can only be avoided by navigators "remodeling their chimneys" and submitting to the compulsion of lowering their chimneys to enable them to pass on high water. This, it is confessed, occasions expense and trouble, and it is shown that it also involves danger and impaired fitness of the boat for profitable use. It operates, therefore, first, as a tonnage duty levied upon the carrier. This duty is followed by an increased charge on freight which becomes a duty upon imports and exports. From these duties all vessels leaving the ports of Wheeling with commerce from the east, bound to the south and west, are free. The same freedom is enjoyed by vessels and commerce arriving from the Gulf, and the ports on the Mississippi, Ohio and their tributaries, and discharging at Wheeling. The ports of Pennsylvania, and vessels bound to and from them, are alone subject to these exactions. The channel obstructed is moreover a great highway, the safest and most

direct, for Pacific commerce. While other states bordering upon this channel may enjoy an uninterrupted course, a barricade is thrown across the path only of Pennsylvania.

For these wrongs, thus specially suffered by Pennsylvania as a State, it is also said she, at her own suit, has no remedy, because the Attorney General of the United States might exhibit a bill to abate the nuisance. *Original answer*, p. 27.

So, perhaps, he might, inasmuch as Congress has passed laws regulating steam navigation and commerce between the States, which this bridge conflicts with and violates. But even in England, the Attorney General is not a necessary party where a special injury is inflicted by a nuisance. The party specially injured may prosecute on his own behalf and in his own name a bill for its abatement. "Individuals who suffer a special damage from a *public* nuisance, may sustain a bill to be relieved therefrom without the Attorney General being a party to the suit." *Shelford on Railways*, 433. *Spencer* v. *London Railway Co.*, 1 *Railw. C.* 159.

The same principle is recognized in *Spooner* v. *McConnell*, 1 *McLean* 338. 15 *Wend.* 113. *The New Bedford Bridge*, 1 *Woodbury and Minot*, 499. The public wrong does not merge the private injury, nor can it take away the right of private redress. If the State cannot sue because the Attorney General might, then it follows that neither can any individual sue for his special injury. The right, in both instances, stands, as we have seen, on the same ground, an obstruction to what is essential for the enjoyment of property belonging to the one injured. But consequential injuries, such as at law are the foundation of actions on the case, are the very class of torts in which equity administers individual relief. Upon direct injuries, such as trespass, to person or property, her jurisdiction is rarely exercised. *See cases cited in the Brief.* That the evil is done on the territory of the wrong-doer, is also a ground for equitable interference, because the injured party may not be able peaceably to enter and abate the nuisance.

In the case of *Georgetown v. the Alexandria Bridge Company*, the general government was territorial sovereign over the district wherein the alleged nuisance was erected; and the Attorney General might well sue for its abatement, because there it was an encroachment on sovereign territorial right.

But the several States alone are territorial sovereigns within their borders. The general government has within the States no territorial sovereignty whatever, unless over forts, arsenals, &c. And hence in this case, the Attorney General's right to sue, if it exists at all, can proceed only upon the ground that the bridge conflicts with the regulations of commerce by Congress, and is therefore an encroachment upon the commercial sovereignty vested by the constitution in the general government. But that this does not take away the right of individuals to sue for their own injury, is shown by the cases of *Smith v. Turner, and Norris, v. the City of Boston*, 7 Howard. The money levied upon vessels by the corporations of New York and Boston, was adjudged to be illegal, because interfering with the commercial regulations of Congress. And the individuals who suffered by the illegal exaction, had their suits to recover back the money paid, that being the special injury sustained by them, and an adequate form of redress. If the unlawful exaction had been imposed by some physical agency, acting upon vessels entering their ports, instead of by legal enactment, the same result must have followed by a different form of action. For the manner in which an illegal exaction, impost, or duty is levied, makes no difference in the right to redress; it can only qualify the *form* in which the most adequate and appropriate relief may be administered. In some cases, an action at law accomplishes the object; in others, an injunction in equity is the only adequate relief. The imposition of illegal taxes by State enactments has been restrained in this Court by injunction. *Bank of the United States v. Osborn.* This establishes that the right to redress does not depend upon the form of injury, and that where wrongful acts are done under color of legal enactments, equity will afford relief.

In the case now under consideration, Pennsylvania sues not as sovereign for encroachment on public right. She sues only as an individual for the special injury suffered by herself. Her right to sue in controversies with individuals or States is secured by the Constitution, and jurisdiction in ALL cases in law or equity between such parties is vested in this Court. *Constitution, Art.* 3.

The word ALL is comprehensive, admitting neither exception nor exclusion. Were it otherwise, then it would follow that a State must by force seek redress for wrongs done to her, and obtain relief by her own act, instead of by judicial decree. A still greater inconvenience or absurdity would ensue. The State, no more than her citizens, can compel the Attorney General to proceed, and as the court cannot act until parties are before them, a State must brook injury to her most valuable property, to rights the most essential, until it please the Attorney General to sue for redress. Must her only adequate judicial relief for nuisance, inflicting irreparable injury, depend upon the mere will of the Attorney General, for the time being, whose feelings might be in concert, and his own interest connected with the wrong-doer? Nay, more,—who may, as in this case, be retained as the advocate of those inflicting the injury?

The Constitution might guard the ports of a State—Congress might pass laws regulating and securing her commerce, and Courts might be ready and willing to execute them, but all to no purpose, while the Attorney General remains at rest. His action is governed only by his own discretion. The safety and value of State property would then depend upon securing an Attorney General as her next friend.

So far, then, as concerns her own property, and the rights guarantied to her as a State, Pennsylvania has the right to sue, inasmuch as the exclusive right set up for the Attorney General is inconsistent with the right of a State to enjoy and protect her property, and is in plain violation of all legal analogies. On the one hand, it would be subjecting the States to

an executive guardianship wholly inconsistent with State rights; and on the other, would be imposing upon the executive a duty delicate in its nature, obnoxious in its performance, and of which the States might well be jealous.

The right to relief at her own suit being shown, its form remains to be mentioned. Abatement by injunction is prayed. And for these reasons—Abatement is a remedy which the law allows persons injured by a nuisance to administer for their own relief; but to avoid the strife and contention that thence might ensue, Courts of equity have assumed jurisdiction to administer that specific remedy.

The grounds of equitable jurisdiction for abatement by injunction, are precisely those occupied herein by the State.

"The ground," says Mr. Justice Story, "for this jurisdiction in cases of purpresture, as well as nuisance, undoubtedly is their ability to give a more complete and perfect remedy than is allowable at law, in order to *prevent irreparable* mischief, and also to suppress oppressive and vexatious litigation. In the first place they can interpose as the courts of law cannot, to restrain and prevent such nuisances threatened or in progress, as well as those already existing. *In the next place, by a perpetual injunction the remedy is made complete through all future time.* Whereas an *information* or *indictment* at the common law can dispose only of the existing nuisance, and for future acts new prosecutions must be brought. In the next place the remedial justice in equity may be prompt and immediate before irreparable mischief is done, whereas at law nothing can be done except after trial and upon the award of judgment." 2 *Story's Equity*, 203. See also *Cases cited in the Brief.*

Obstruction of water courses are cases calling for this remedial interposition of courts of equity. 2 *Story's Equity*, 206.

It needs no argument to show that the injury in question, as it is great in magnitude, is also most clearly within the class of what are known as irreparable injuries. In the first place being an injnry to trade, the full extent of injury cannot be measured in damages, any more than in cases of nuisance to health it can be ascertained how many months or weeks or hours life may be shortened. In the second place, it is unceasing and without end. While the water flows and the bridge stands the injury continues. The mischief is not only irreparable, but the litigation to which it must lead would be vexatious in the last degree. The strife and contention that must follow, is also of the most serious character.

It is the specific penalty prescribed by the charter—the terms upon which the defendants obtained permission to erect their bridge—the agreement entered into. That Virginia has since chosen for herself to waive that penalty, can make no difference as to the equities of other parties. This remedy is still in the charter, "If the bridge shall be so erected as to obstruct navigation, *the said bridge may be treated as a public nuisance and abated accordingly.*" *Charter of Wheeling Bridge.*

It is said that before injunction, a trial at law should be awarded. But trials at law are awarded only where facts are contested; and cases of nuisance are excepted from the benefit even of this rule. "If the thing sought to be prohibited is in itself a nuisance, the court will interfere to stay irreparable mischief, without waiting the result of a trial." *Shelford on Railways*, 431. But what facts are here to be ascertained? The highway, the obstruction, the injury are confessed on the record. The whole defence rests simply upon legal exceptions, leaving no fact to be tried.

The acts of Pennsylvania authorizing bridges within her own territory are urged in defence. To this it is sufficient to remark that the equitable doctrine of set off has never been applied to cases of nuisance. And if it were, the bridges on the Alleghany and Monongahela are not a fair equivalent for the navigation of the Ohio, Mississippi, and their branches cut off by the Wheeling bridge. When complaint is made or injury shown from these bridges, then will be time to show their defence. With this case and the matters here involved they have nothing to do.

The State is also charged with laches—standing by and witnessing without objection the defendants expend their money. This is a strange charge, when it is remembered that Pennsylvania met these defendants in Congress, and there urged her specific objections, resisted and defeated a bill for the erection of the bridge that had been introduced by the member from Wheeling, before her remonstrance reached Washington.

She could not follow them into the Legislature of Virginia. And if she had done so, her rights were sufficiently guarded by the 14th section of their charter. Its violation was not to be presumed. But when it became manifest that in defiance of its provisions, the river was about to be obstructed, the law officer of the State, her attorney general, promptly appealed to this tribunal. What charge of laches could be more unfounded? Pending these proceedings, in the fancied belief that an advantage would be gained thereby, the work was hurried on to its completion. Warning was given by the learned judge before whom the motion was made, that no equity would be thus gained, but that if found a nuisance the bridge must be abated. And this was made one of the grounds for then denying the motion. *Judge Grier's opinion.* Abatement is the only remedy that can save the public works of Pennsylvania from irreparable injury. It is the condition upon which the defendants in their own wrong obstructed this highway—and it is the penalty pronounced by Virginia for infringing the rights of navigation.

These rights Pennsylvania might protect by abatement of this nuisance by her own act. But the Constitution established this tribunal as one of dignity, wherein a State might sue and obtain redress by due course of law. Its powers and duties are defined in No. 80 of the Federalist, and in the constitution by terms of the most wide and general signification, extending to "ALL THOSE CASES *which involve the* PEACE *of the confederacy, whether they relate to the intercourse between the United States and foreign nations, or between the States themselves.*" Comment upon these terms from me would be superfluous. They embrace the very case now

before the court—than which none can be conceived more directly or deeply involving the peace of the confederacy. It presents no question of *abstract* rights—but one of actual existing vested rights, essential to the existence of the State and the welfare of her people. Her rights of commerce extending between the several States—the right of navigation upon a public river—the use of a highway upon which the value of internal improvements costing over forty millions of dollars depend.

Upon these considerations the State of Pennsylvania prosecutes this suit. Declaring it to be consistent with her character to seek a peaceful remedy—

Her Legislature by unanimous vote in both branches adopted the following resolutions, in obedience to which I now appear before ihis Court.

"Be it resolved by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met—That the free and uninterrupted navigation of the Ohio river as a common highway, is a right belonging to the citizens of Pennsylvania, which being essential to the prosperity of the State, it is the duty of the Commonwealth to assert and defend.

"That the proceedings in behalf of said State, instituted by her Attorney General in the Supreme court of the United States, and now pending therein, against the Wheeling and Belmont bridge company, to abate the nuisance occasioned by their bridge lately erected across said river, be prosecuted to final judgment, decree and execution for abatement of said nuisance."

Having thus presented my proposition in its various branches, I feel that it is not needful for me to urge upon this court the important considerations which necessarily arise from the case—considerations affecting not only life and property to an immeasurable extent, but vast commerce, essential State rights, and the peace of the confederacy. They will present themselves to the court with more force than I could urge them. I know not, Sir, that it becomes me to say more in this behalf. This only I will add:

In 1765, a distinguished son of Pennsylvania, Dr. Rittenhouse, first conceived the plan of her great works, connecting the waters of the Lakes and the Atlantic with the Ohio river. Seventy years elapsed before the resources of the State were equal to such an undertaking. But once commenced, it was accomplished. While all other works tending to the same object halted east of the Alleghenies, Pennsylvania forced her way through, thus opening a cheap, easy and secure water transportation from the gulf and the rocky mountains to the Atlantic seaboard. But no sooner had this mighty work been completed, and its revennes commenced to replenish the exhausted treasury of the State, and a prosperous commerce to reimburse her citizens for their heavy taxation, than the flagitious scheme is undertaken to cut her off from the Ohio by a bridge at Wheeling, within fifty miles of her borders.

When, to prevent so great a wrong, she appeals to the Supreme Court; the work is hurried on; and pending her application for an injunction, iron cables are stretched across the channel of a navigable river, interrupting vessels arriving and departing from the ports of Pennsylvania. And before she can be heard in this tribunal, her vessels are stopped on a public highway, their cargo and passengers discharged at Wheeling, and Pennsylvania ports shut up. For less injuries than these, States have been heretofore prompt to redress their own wrongs, and have rushed swiftly to war. Even under our government, in defence of commercial rights, supposed to be invaded by Congressional enactment, the banner of Disunion has been unfurled in the South. In the North and East, bordering States, asserting navigation privileges, have resorted to acts of retortion and confiscation, until at length civil war was ready to burst forth on their borders, and rage along their coasts. At a later day, the Western States of Ohio and Michigan, on a mere boundary question, arrayed their military forces against each other, under command of their respective Governors. And now, on a mere abstract question, State is seen arrayed against State, with threats and warlike aspect.

To these, what a contrast and example does Pennsylvania this day present. Threatened in her dearest rights, she makes no appeal to force.

When the foundations of this government were laid, and this tribunal established as its corner stone, Pennsylvania was there. She knew that the chief object of the Constitution was to substitute the law of reason for the law of force; and her abiding confidence in its efficacy for every exigency has never been shaken. Her commerce obstructed on a public river—her ports shut up—she comes this day at the head of no armed squadrons—with no blustering enactments of State sovereignty—with no threatenings of disunion upon her lips. As becomes the keystone of the federal arch, she seeks first a peaceful remedy. She appears as an humble suitor before civil judges, sitting upon their judgment seat, surrounded by no armed janizaries—by no imperial guards; but in the exercise of their constitutional functions, clothed with an authority more potent, in her estimation, than an army with banners. She asks them to protect a right, deemed the most inestimable among all nations, belonging to her by the law of nature and of nations; guarantied by the Constitution and the laws of Congress, for the improvement of which millions of her treasure have been lavished, and upon which the welfare of her people depends. She asks them by simple injunction, to prevent a local corporation from violating under color of State authority a right, that a world in arms could not wrest from her. How far the wholesome influence of this example may depend upon the decree herein to be rendered, the learned members of this court, better than I am, are able to judge.